No. 4.

Advance Sheets from the Forthcoming Catalogue of the Central Fire-Proofing Company of New York.

ADVANCE SHEETS

of a

FORTHCOMING CATALOGUE

appertaining to the use of

Terra Cotta Fire-proofing

as manufactured by the

Central Fire-proofing Company,

HENRY M. KEASBEY, President.

New York Office: 874 Broadway.

FOURTH SERIES.

Henry L. Hinton, Author and Compiler.
Designer also of the "Model-Arch."

NEW YORK
CENTRAL FIRE-PROOFING COMPANY
1899

ANNOUNCEMENT.

The present issue of advance sheets completes the presentation, which was commenced in the last issue, of Side-Construction Arches. The special feature of the issue is the newly designed arch, the Model-Arch, as it is called; of which, as before announced, the requirements of the various blocks, both in their individual and collective capacity, have been long and carefully studied in the light of past experience and present knowledge. Single and double batter arch construction, with the use of side-construction blocks, is also set forth in this issue (see page 61-62 of girder construction), and the Tension Member Arch, in the side-construction method, is shown (see page 59-60).

Omitting but one double page (71-72), the present issue gives a complete presentation of the girder-covering sections made for all kinds of floor arches, together with approved methods of application. In Girder Covering a new series of blocks, in systematically arranged sizes, have been designed. The sections of this series are given, with tabulated information concerning them, and also of sizes that have not been illustrated. It is called Model-Arch Girder Covering. It will be found applicable to a wide range of cases that occur in common practice, obviating the necessity of making blocks of special shapes (which not infrequently adds much to the cost of the material) or of resorting to the use of the inferior substitutes for terra cotta that have been introduced for the protection of girders.

The illustrating of Column-Covering sections, together with the various methods of using them in construction, is given complete in this issue. But with a table of the properties of these sections, which will appear in Division IV.—Miscellaneous Terra Cotta Fire-proofing Tables, additional information will be found, and full particulars given concerning the designs the various sections of which have not been included with the illustrations here shown.

Five typical methods of side-construction floor arch work are given in this issue, with accompanying text in explanation. This text has been very carefully prepared with the view, not only of explaining the illustrations themselves, but of affording the necessary means of obtaining, with the aid of the information accompanying the drawings and given in the safe load tables of the catalogue, any required information concerning the weight and strength of terra cotta flat arch construction.

The next issue, which is well under way, will be given to the Flat End-Construction Arch, and to the Combination-Construction Arch, including a full presentation of the system of floor construction, made with one block extending from beam to beam, commonly called "Lintel Construction."

The two plates of diagramatic curves, and their accompanying tables, in the present issue, give the safe loads for all of the Model-Arch and Style B sections, both "light" and "heavy," when used in side-construction floor arch work—the diagram and table for the heavy sections (which are the stronger, of course) being applicable to the light sections if set in the manner of the combination-construction arch. The diagrams and tables, however, which will appear in the next issue of advance sheets—accompanying the end-construction arches—while giving exactly the safe load of a definite section in each size arch (as in the case of the side-

construction diagrams and tables in this issue) will also be applicable, through the use of coefficients, for obtaining the safe loads of all sizes and sections of end-construction arches at all spans. The coefficients will accompany the illustrations of the end-construction sections. This, of course, will be very useful, as there are a great many blocks made, besides the regular arch block, that can be used when occasion demands, in end-construction arch work.

The following permanent divisions of the catalogue are now nearly ready for the printer:

Division III.—Safe Loads for all Terra Cotta Arches.

Division V.—Arch-Setting Tables for Terra Cotta Flat Arches.

Division VII.—Steel-Beam and Terra Cotta Floor Arch Tables.

Division VIII.—Freight, Contractors' Estimating and other Useful Building Construction Tables.

SAFE LOADS.

SIDE-CONSTRUCTION FLAT ARCHES.

Model-Arch (light sections) and Style B (light) Sections.

*See foot-note *, page 26. See also accompanying diagram.*

Spans	4″ Arch	5″ Arch	6″ Arch	7″ Arch	8″ Arch	9″ Arch	10″ Arch	11″ Arch	12″ Arch	13″ Arch	14″ Arch	15″ Arch
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
1′ 6″	792	1148	1287	1611	2091	2420	2500	2500	2500	2500	2500	2500
1′ 7″	710	1029	1154	1444	1875	2170	2487	2500	2500	2500	2500	2500
1′ 8″	639	927	1039	1301	1690	1955	2242	2500	2500	2500	2500	2500
1′ 9″	578	838	940	1178	1530	1771	2031	2294	2500	2500	2500	2500
1′ 10″	525	763	855	1071	1392	1612	1848	2087	2500	2500	2500	2500
1′ 11″	479	696	781	978	1272	1473	1689	1908	2372	2378	2500	2500
2′	439	638	715	897	1166	1350	1549	1749	2175	2181	2415	2500
2′ 1″	403	586	658	825	1073	1242	1425	1610	2003	2008	2223	2500
2′ 2″	371	541	607	761	990	1147	1316	1487	1849	1853	2053	2365
2′ 3″	343	500	561	704	916	1061	1218	1376	1712	1717	1901	2190
2′ 4″	318	464	520	653	850	985	1131	1278	1590	1594	1765	2034
2′ 5″	295	431	484	607	791	917	1052	1189	1481	1484	1643	1893
2′ 6″	275	402	451	566	738	855	982	1110	1382	1384	1533	1767
2′ 7″	256	375	421	529	689	799	918	1037	1292	1294	1434	1653
2′ 8″	239	351	394	493	645	748	859	972	1211	1212	1343	1549
2′ 9″	224	329	369	464	605	702	807	912	1137	1138	1261	1454
2′ 10″	210	309	347	436	569	660	759	858	1070	1071	1187	1368
2′ 11″	197	290	326	410	536	621	714	808	1007	1008	1117	1289
3′	186	273	307	386	505	586	674	762	950	951	1054	1216
3′ 1″	175	258	290	365	477	553	636	720	898	899	996	1149
3′ 2″	165	244	274	345	451	524	602	681	850	851	943	1088
3′ 3″	156	230	259	326	427	496	570	645	805	805	893	1031
3′ 4″	147	218	245	309	404	470	541	612	764	764	847	978
3′ 5″	139	207	232	293	384	446	513	581	726	726	805	930
3′ 6″	132	196	220	278	365	424	488	552	690	690	765	884
3′ 7″	125	186	209	264	347	403	464	526	657	657	729	842
3′ 8″	119	177	199	252	330	384	442	501	626	626	694	802
3′ 9″	113	168	189	240	315	366	422	478	598	597	662	765
3′ 10″	107	160	180	228	300	349	402	456	571	570	632	731
3′ 11″	102	153	172	218	286	333	384	436	545	545	604	699
4′	97	146	164	207	274	318	367	416	522	521	578	668
4′ 1″	93	139	157	199	262	305	351	398	499	498	553	640
4′ 2″	88	133	150	190	250	291	336	382	478	477	530	613
4′ 3″	84	127	143	182	240	279	322	366	459	458	508	588
4′ 4″	80	121	137	174	230	268	309	351	440	439	487	564
4′ 5″	77	116	131	167	220	257	296	336	422	421	468	541
4′ 6″	73	111	125	160	211	246	285	323	406	404	449	520
4′ 7″	70	107	120	153	203	237	273	310	390	389	432	500
4′ 8″	67	102	115	147	195	227	263	299	375	374	415	481
4′ 9″	64	98	111	141	187	219	253	287	361	360	400	463
4′ 10″	61	94	106	136	180	210	243	276	348	346	385	446
4′ 11″	59	90	102	130	173	202	234	266	335	333	371	430

SAFE LOADS.—Continued.

SIDE-CONSTRUCTION FLAT ARCHES.

Model-Arch (light sections) and Style B (light) Sections.

Spans	4″ Arch	5″ Arch	6″ Arch	7″ Arch	8″ Arch	9″ Arch	10″ Arch	11″ Arch	12″ Arch	13″ Arch	14″ Arch	15″ Arch
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
5′	56	8/	98	125	166	195	226	256	323	321	357	415
5′ 1″	54	83	94	120	160	188	217	247	312	310	345	400
5′ 2″	52	80	90	116	154	181	210	238	301	299	332	386
5′ 3″	50	77	87	112	149	174	202	230	290	288	321	373
5′ 4″	48	74	84	107	143	168	195	222	280	278	310	360
5′ 5″	46	71	81	103	138	162	188	214	271	269	299	348
5′ 6″	44	68	78	100	133	157	182	207	262	260	289	336
5′ 7″	42	66	75	96	129	151	176	200	253	251	280	325
5′ 8″	40	63	72	93	124	146	170	194	245	243	271	315
5′ 9″	39	61	69	89	120	141	164	187	237	235	262	305
5′ 10″	37	59	67	86	116	136	159	181	230	227	253	295
5′ 11″	36	57	64	83	112	132	153	175	222	220	245	286
6′	34	55	62	80	108	127	149	170	215	213	237	277
6′ 1″	33	53	60	78	105	123	144	164	209	206	230	268
6′ 2″	31	51	58	75	101	119	139	159	202	200	223	260
6′ 3″	30	49	56	72	98	115	135	154	196	194	216	252
6′ 4″	29	47	54	70	95	112	131	149	190	188	210	245
6′ 5″	28	45	52	67	92	108	127	145	185	182	203	237
6′ 6″	27	44	50	65	89	105	123	140	179	177	197	231
6′ 7″	26	42	48	63	86	102	119	136	174	171	191	224
6′ 8″	25	41	46	61	83	98	115	132	169	166	186	217
6′ 9″	24	39	45	59	80	95	112	128	164	161	180	211
6′ 10″	23	38	43	57	78	93	108	124	159	157	175	205
6′ 11″	22	37	42	55	76	90	105	121	155	152	170	199
7′	21	35	40	53	73	87	102	117	150	148	165	194
7′ 1″	20	34	39	51	71	84	99	114	146	144	161	188
7′ 2″	19	33	37	50	69	82	96	110	142	140	156	183
7′ 3″	18	32	36	48	67	79	93	107	138	136	152	178
7′ 4″	17	30	35	47	65	77	91	104	134	132	147	173
7′ 5″	17	29	34	45	63	75	88	101	131	128	143	169
7′ 6″	16	28	33	44	61	72	86	98	127	124	139	164
7′ 7″	15	27	31	42	59	70	83	96	124	121	136	160
7′ 8″	15	26	30	41	57	68	81	93	120	118	132	156
7′ 9″	14	25	29	39	55	66	78	90	117	115	128	151
7′ 10″	13	24	28	38	54	64	76	88	114	111	125	147
7′ 11″	13	24	29	36	52	62	74	86	111	108	122	144
8′	12	23	26	35	50	61	72	83	108	105	118	140
8′ 1″	11	22	25	. .	49	59	70	81	105	103	115	136
8′ 2′	11	21	24	. .	47	57	68	79	103	100	112	133
8′ 3″	11	20	24	. .	46	55	66	76	100	97	109	129
8′ 4″	10	19	23	. .	45	54	64	74	97	95	106	126
8′ 5″	. .	19	22	. .	43	52	62	72	95	92	104	123

SAFE LOADS.—Continued.

SIDE-CONSTRUCTION FLAT ARCHES.

Model-Arch (light sections) and Style B (light) Sections.

Spans	4″ Arch	5″ Arch	6″ Arch	7″ Arch	8″ Arch	9″ Arch	10″ Arch	11″ Arch	12″ Arch	13″ Arch	14″ Arch	15″ Arch
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
8′ 6″	. .	18	21	. .	42	51	61	70	92	90	101	120
8′ 7″	. .	17	20	. .	41	49	59	69	90	87	98	117
8′ 8″	. .	17	19	. .	39	48	57	67	88	85	96	114
8′ 9″	. .	16	19	. .	38	47	56	65	86	83	93	111
8′ 10″	. .	15	18	. .	37	45	54	63	83	81	91	108
8′ 11″	. .	15	17	. .	36	44	53	61	81	78	88	105
9′	. .	14	17	. .	35	43	51	60	79	76	86	103
9′ 1″	. .	13	16	. .	. .	41	50	58	77	74	84	100
9′ 2″	. .	13	15	. .	. .	40	49	57	75	72	82	98
9′ 3″	. .	12	15	. .	. .	39	47	55	73	71	80	95
9′ 4″	. .	12	14	. .	. .	38	46	54	72	69	78	93
9′ 5″	. .	11	13	. .	.	37	45	52	70	67	76	91
9′ 6″	. .	11	13	. .	. .	36	43	51	68	65	74	89
9′ 7″	. .	10	12	. .	. .	35	42	49	66	63	72	86
9′ 8″	. .	10	12	. .	. .	. .	41	48	65	62	70	84
9′ 9″	. .	. .	11	. .	.	. .	40	47	63	60	68	82
9′ 10″	. .	. .	11	. .	. .	. .	39	46	62	59	67	80
9′ 11″	. .	. .	10	. .	. .	.	38	44	60	57	65	78
10′	. .	. .	10	. .	. .	. .	37	43	59	56	63	76
10′ 1″	. .	. .	. .	. .	. .	. .	35	42	57	54	62	75
10′ 2″	. .	. .	. .	. .	. .	. .	. .	41	56	53	60	73
10′ 3″	. .	. .	. .	. .	. .	. .	. .	40	54	51	59	71
10′ 4″	. .	. .	. .	. .	. .	. .	. .	39	53	50	57	69
10′ 5″	. .	. .	. .	. .	. .	. .	. .	38	52	49	55	68
10′ 6″	. .	. .	. .	. .	. .	. .	. .	37	50	47	54	66
10′ 7″	. .	. .	. .	. .	. .	. .	. .	36	49	46	53	64
10′ 8″	. .	. .	. .	. .	. .	. .	. .	35	48	45	51	63
10′ 9″	. .	. .	. .	. .	. .	. .	. .	. .	47	44	50	61
10′ 10″	. .	. .	. .	. .	. .	. .	. .	. .	45	42	49	60
10′ 11″	. .	. .	. .	. .	. .	. .	. .	. .	44	41	47	58
11′	. .	. .	. .	. .	. .	. .	. .	. .	43	40	46	57
11′ 1″	. .	. .	. .	. .	. .	. .	. .	. .	42	39	45	55
11′ 2″	. .	. .	. .	. .	. .	. .	. .	. .	41	38	44	54
11′ 3″	. .	. .	. .	. .	. .	. .	. .	. .	40	37	43	53
11′ 4″	. .	. .	. .	. .	. .	. .	. .	. .	39	36	42	52
11′ 5″	. .	. .	. .	. .	. .	. .	. .	. .	38	35	40	50
11′ 6″	. .	. .	. .	. .	. .	. .	. .	. .	37	. .	39	49
11′ 7″	. .	. .	. .	. .	. .	. .	. .	. .	36	. .	38	48
11′ 8″	. .	. .	. .	. .	. .	. .	. .	. .	35	. .	37	47
11′ 9″	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	36	45
11′ 10″	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	35	44
11′ 11″	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	43

SAFE LOADS.—Continued.

SIDE-CONSTRUCTION FLAT ARCHES.

Model-Arch (light sections) and Style B (light) Sections.

Spans	4″ Arch	5″ Arch	6″ Arch	7″ Arch	8″ Arch	9″ Arch	10″ Arch	11″ Arch	12″ Arch	13″ Arch	14″ Arch	15″ Arch
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
12′	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	42

Explanation of Table.

The safe loads given are expressed in pounds, uniformly distributed, per square foot of floor surface. The factor of safety used is 7.†

The widest span for an arch, under ordinary circumstances, is marked by the single rule across the column (followed by the small figures). Beyond this point it is recommended that a special tension member be introduced in the construction. (See Introductory Notes to this division of the catalogue.) The double rule marks the limit of the span under the building law of the State of New York.‡

* On reference to the Table of Properties (found in Division: Miscellaneous Terra Cotta Fire-Proofing Tables) it will be noticed there is a small factional difference in the least cross-sectional areas of some of the lengtheners of arches of corresponding depth of the Model-Arch and Style B series, in both the light and heavy sections, but the safe loads for these arches, under all ordinary conditions, can be considered the same, notwithstanding. The table is made on the sections of the Model-Arch; using the block having the least cross-sectional area in each size arch. The keys, however, are not necessarily included, as the Model-Arch key has a distribution of material securing extra strength for it at the point of maximum pressure—when placed in, or near, the centre of an arch.

† Owing to the fact that terra cotta floors are constructed in various ways the only factor that enters into them that has been considered in these tables in connection with an allowance for dead load is the weight of the terra cotta arch itself. Under all ordinary circumstances, considering the large factor of safety, this allowance is sufficient. In exceptional cases make the proper allowance for the additional dead load.

‡ When this law was originally enacted there were no flat floor arches in use in New York deeper than 12 inches, consequently, in the State of New York, flat arches of greater depth are not by law strictly limited as to spans; the matter, in the *City* of New York, resting practically with the Building Department. Owing to the care required in setting flat arches of wide spans, we have placed the limit (for the construction in which a special tension member is not used), for all side-construction arches of greater depth than 12-inch, within that permitted by the law for a 12-inch arch; viz., 10 feet 1 inch. The law referred to is common to many of the states throughout the Union. The words are as follows: "The space between the beams may be filled in with sectional hollow brick of hard-burned clay, porous terra cotta, or some equally good fire-proof material, having a depth of not less than one and one-quarter inches to each foot of span, a variable distance being allowed of not over six inches in the span between the beams."

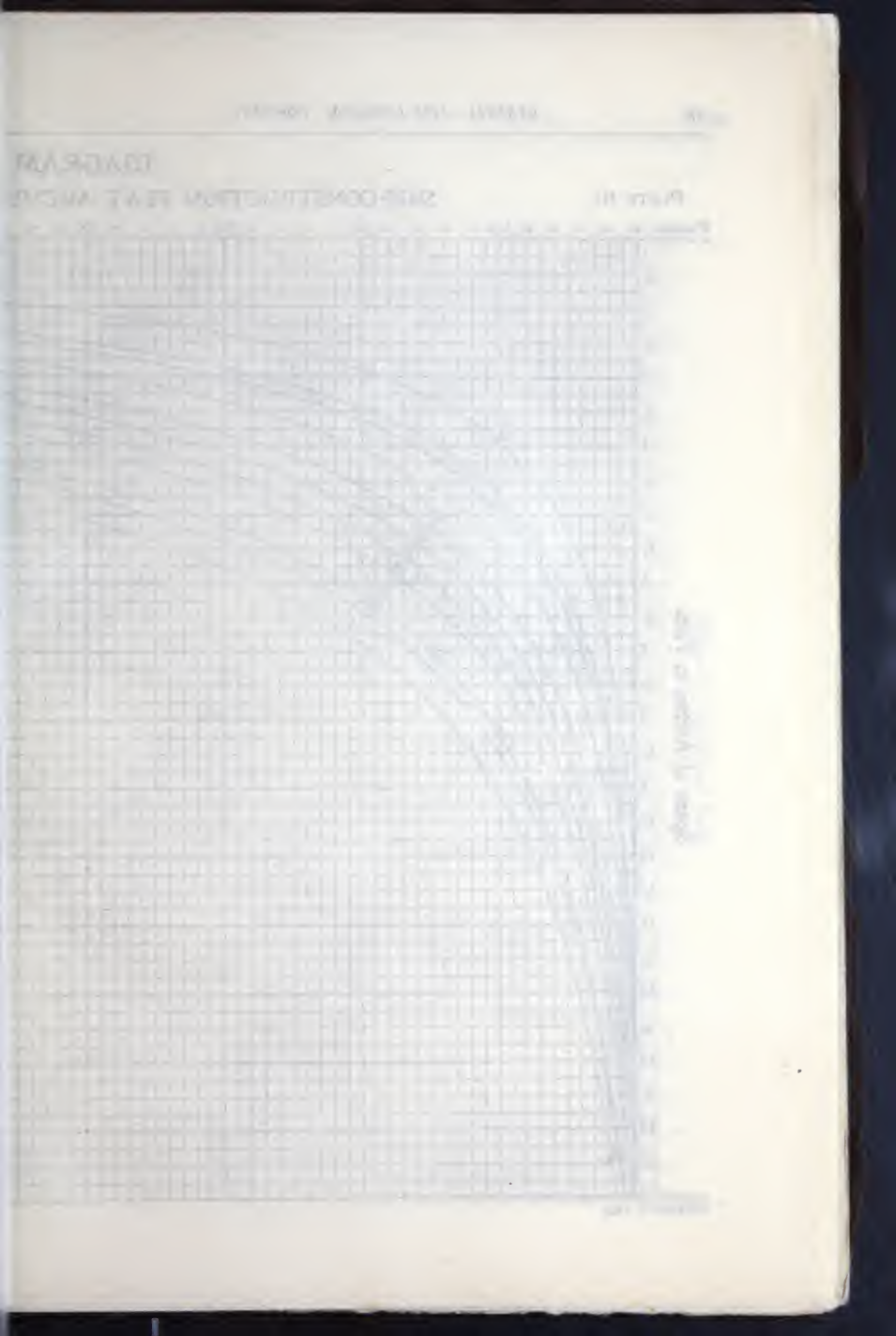
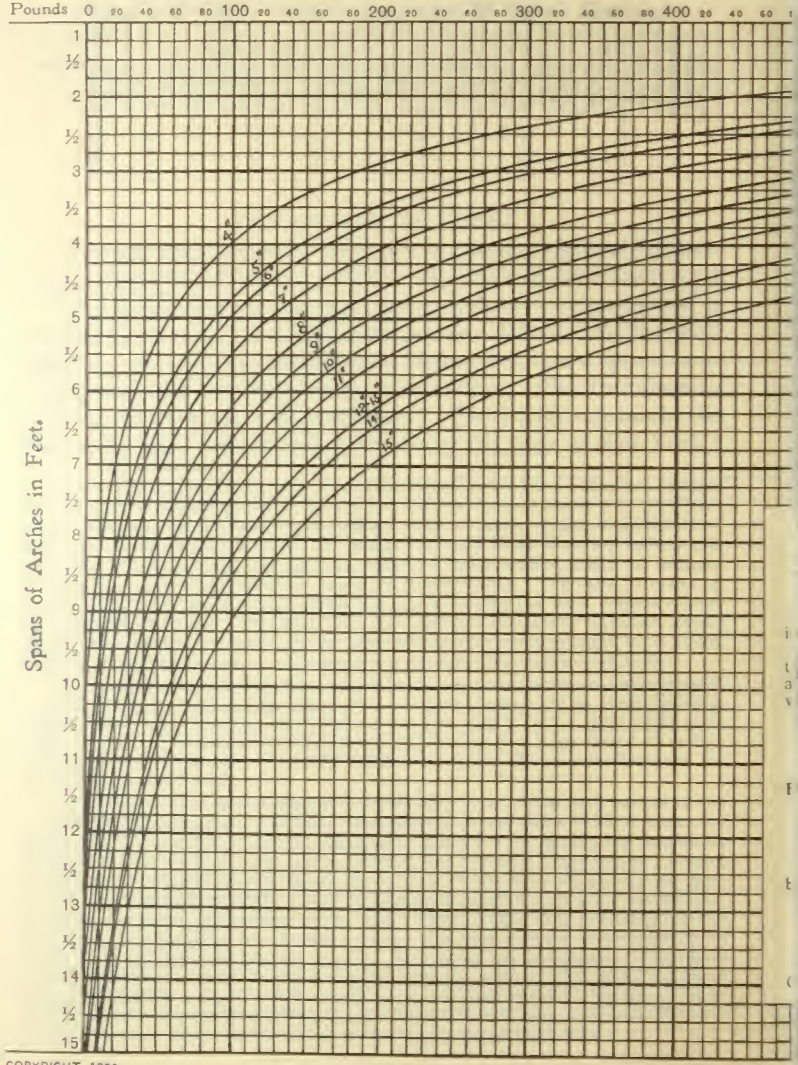


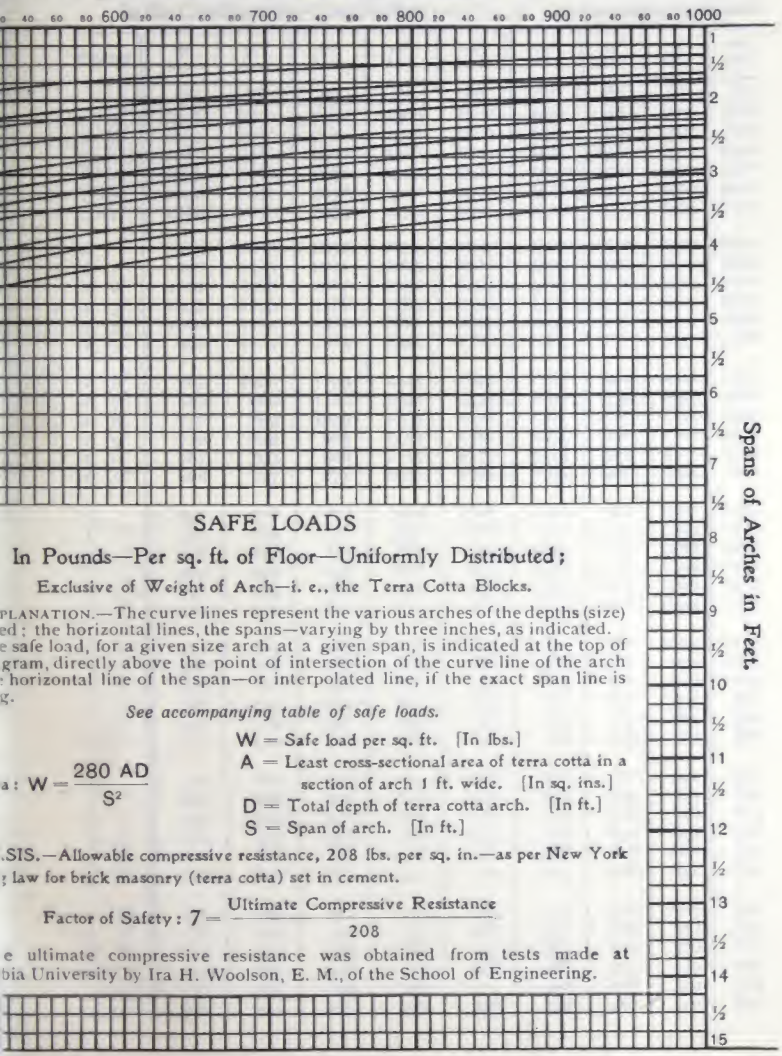
DIAGRAM C

PLATE III. SIDE-CONSTRUCTION FLAT ARCHES.



SAFE LOADS.

el-Arch Light Sections and Style B Light Sections.



SAFE LOADS

In Pounds—Per sq. ft. of Floor—Uniformly Distributed;

Exclusive of Weight of Arch—i. e., the Terra Cotta Blocks.

PLANATION.—The curve lines represent the various arches of the depths (size) ed; the horizontal lines, the spans—varying by three inches, as indicated. e safe load, for a given size arch at a given span, is indicated at the top of gram, directly above the point of intersection of the curve line of the arch horizontal line of the span—or interpolated line, if the exact span line is g.

See accompanying table of safe loads.

a: $W = \frac{280\ AD}{S^2}$

W = Safe load per sq. ft. [In lbs.]
A = Least cross-sectional area of terra cotta in a section of arch 1 ft. wide. [In sq. ins.]
D = Total depth of terra cotta arch. [In ft.]
S = Span of arch. [In ft.]

.SIS.—Allowable compressive resistance, 208 lbs. per sq. in.—as per New York ; law for brick masonry (terra cotta) set in cement.

Factor of Safety: $7 = \frac{\text{Ultimate Compressive Resistance}}{208}$

e ultimate compressive resistance was obtained from tests made at bia University by Ira H. Woolson, E. M., of the School of Engineering.

SAFE LOADS.—SIDE-CONSTRUCTION AND COMBINATION-CONSTRUCTION FLAT ARCHES.—Model-Arch and Style B Sections—with heavy lengtheners—in the Side-Construction; Model-Arch and Style B—light sections throughout—in the Combination-Construction (see *, p. 34). *See accompanying diagram.*

Spans	8″ Arch	9″ Arch	10″ Arch	11″ Arch	12″ Arch	13″ Arch	14″ Arch	15″ Arch	16″ Arch
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
1′ 6″	2458	2500	2500	2500	2500	2500	2500	2500	2500
1′ 7″	2204	2500	2500	2500	2500	2500	2500	2500	2500
1′ 8″	1985	2350	2500	2500	2500	2500	2500	2500	2500
1′ 9″	1801	2129	2480	2500	2500	2500	2500	2500	2500
1′ 10″	1636	1937	2258	2500	2500	2500	2500	2500	2500
1′ 11″	1494	1770	2063	2479	2500	2500	2500	2500	2500
2′	1369	1623	1892	2274	2500	2500	2500	2500	2500
2′ 1″	1260	1493	1741	2093	2381	2500	2500	2500	2506
2′ 2″	1162	1378	1607	1932	2199	2385	2500	2500	2500
2′ 3″	1075	1276	1488	1789	2036	2206	2379	2500	2500
2′ 4″	1000	1184	1381	1661	1890	2050	2210	2402	2500
2′ 5″	928	1102	1285	1546	1760	1909	2058	2237	2386
2′ 6″	865	1027	1199	1442	1642	1781	1920	2087	2224
2′ 7″	809	960	1121	1348	1535	1666	1796	1953	2082
2′ 8″	757	899	1049	1263	1438	1561	1683	1830	1952
2′ 9″	710	844	984	1184	1351	1465	1579	1718	1832
2′ 10″	667	793	926	1115	1270	1379	1487	1617	1725
2′ 11″	628	747	871	1050	1196	1299	1400	1523	1624
3′	592	704	822	990	1128	1224	1321	1437	1533
3′ 1″	559	665	777	936	1066	1158	1249	1359	1449
3′ 2″	528	629	735	885	1009	1096	1182	1286	1372
3′ 3″	500	595	696	838	956	1038	1120	1219	1300
3′ 4″	473	564	660	795	907	985	1063	1156	1232
3′ 5″	449	536	625	755	862	936	1010	1099	1172
3′ 6″	427	509	595	718	819	890	960	1045	1114
3′ 7″	406	484	566	683	780	847	914	995	1062
3′ 8″	386	461	539	651	743	807	871	949	1012
3′ 9″	368	439	514	621	708	770	831	905	964
3′ 10″	351	419	491	593	676	735	794	865	922
3′ 11″	335	400	469	566	646	703	759	827	882
4′	319	382	448	541	618	672	726	791	843
4′ 1″	305	366	428	518	591	643	695	762	807
4′ 2″	292	350	410	496	567	616	666	726	774
4′ 3″	280	335	393	475	543	591	639	696	742
4′ 4″	268	321	377	456	521	567	613	668	712
4′ 5″	257	308	361	437	500	544	588	641	684
4′ 6″	246	296	347	420	480	523	565	616	657
4′ 7″	236	284	333	403	462	503	543	593	632
4′ 8″	227	273	320	388	444	483	523	570	608
4′ 9″	218	262	308	373	427	466	503	549	585
4′ 10″	209	252	296	359	411	448	485	529	564
4′ 11″	201	242	285	346	396	432	467	510	543

SAFE LOADS.—Continued.

Side and Combination-Construction Flat Arches.

Model-Arch (heavy lengtheners), etc. *See heading, p 31.*

SPANS	8″ Arch	9″ Arch	10″ Arch	11″ Arch	12″ Arch	13″ Arch	14″ Arch	15″ Arch	16″ Arch
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
5′	193	233	275	333	382	416	450	491	523
5′ 1″	186	225	265	321	368	402	434	474	506
5′ 2″	179	217	255	310	355	387	419	458	488
5′ 3″	173	209	246	299	343	374	405	442	471
5′ 4″	166	201	237	288	331	361	391	427	455
5′ 5″	160	194	229	279	320	349	378	413	440
5′ 6″	155	188	221	269	309	337	365	399	425
5′ 7″	149	181	214	260	299	326	353	386	412
5′ 8″	144	175	207	252	289	316	342	374	398
5′ 9″	139	169	200	243	279	305	331	362	386
5′ 10″	134	163	193	235	270	296	320	350	373
5′ 11″	129	158	187	228	262	286	310	339	362
6′	125	153	181	220	253	277	300	329	351
6′ 1″	121	148	175	213	245	289	291	319	340
6′ 2″	117	143	169	207	238	260	282	309	330
6′ 3″	113	138	164	200	231	252	274	300	320
6′ 4″	109	134	159	194	224	245	266	291	310
6′ 5″	105	129	154	188	217	238	258	282	301
6′ 6″	102	125	149	182	210	230	250	274	292
6′ 7″	99	121	144	177	204	224	243	266	284
6′ 8″	95	118	140	172	198	217	236	259	275
6′ 9″	92	114	136	166	192	211	229	251	268
6′ 10″	89	111	132	162	187	205	223	244	260
6′ 11″	86	107	128	157	181	199	216	237	253
7′	84	104	124	152	176	193	210	231	246
7′ 1″	81	101	120	148	171	188	204	225	239
7′ 2″	78	98	117	144	166	183	199	218	233
7′ 3″	76	95	113	139	162	178	193	212	226
7′ 4″	74	92	110	135	157	173	188	207	220
7′ 5″	71	89	107	132	153	168	183	201	214
7′ 6″	69	86	104	128	148	163	178	196	208
7′ 7″	67	84	101	124	144	159	173	191	203
7′ 8″	65	81	98	121	140	155	169	186	198
7′ 9″	63	79	95	118	137	151	164	181	193
7′ 10″	61	77	92	114	133	147	160	176	188
7′ 11″	59	74	90	111	129	143	156	172	183
8′	57	72	87	108	126	139	152	167	178
8′ 1″	55	70	84	105	122	135	148	163	174
8′ 2″	53	68	82	102	119	132	144	160	169
8′ 3″	52	66	80	99	116	128	140	155	165
8′ 4″	50	64	78	97	113	125	137	151	161
8′ 5″	48	62	75	94	110	122	133	147	157

SAFE LOADS.—Continued.

Side and Combination-Construction Flat Arches.

Model-Arch (heavy lengtheners), etc. *See heading, p. 31.*

SPANS	8″ Arch	9″ Arch	10″ Arch	11″ Arch	12″ Arch	13″ Arch	14″ Arch	15″ Arch	16″ Arch
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
8′ 6″	47	60	73	92	107	119	130	144	153
8′ 7″	45	59	71	89	104	116	126	140	149
8′ 8″	44	57	69	87	102	113	123	137	145
8′ 9″	43	55	67	84	99	110	120	133	142
8′ 10″	41	54	65	82	96	107	117	130	138
8′ 11″	40	52	63	80	94	104	114	127	135
9′	39	51	62	78	91	102	111	124	132
9′ 1″	37	49	60	76	89	99	109	121	128
9′ 2″	36	48	58	74	87	97	106	118	125
9′ 3″	35	46	57	72	84	94	103	115	122
9′ 4″	34	45	55	70	82	92	101	112	119
9′ 5″	33	43	53	68	80	90	98	109	116
9′ 6″	32	42	52	66	78	87	96	107	114
9′ 7″	31	41	50	64	76	85	94	104	111
9′ 8″	30	40	49	63	74	83	91	102	108
9′ 9″	. .	38	48	61	72	81	89	99	106
9′ 10″	. .	37	46	59	70	79	87	97	103
9′ 11″	. .	36	45	58	69	77	85	95	101
10′	. .	35	44	56	67	75	82	92	98
10′ 1″	. .	34	42	55	65	73	81	90	96
10′ 2″	. .	33	41	53	63	71	79	88	94
10′ 3″	. .	32	40	52	62	70	77	86	92
10′ 4″	. .	31	39	50	60	68	75	84	89
10′ 5″	. .	30	38	49	59	66	73	82	87
10′ 6″	. .	. .	36	47	57	64	71	80	85
10′ 7″	. .	. .	35	46	55	63	70	78	83
10′ 8″	. .	. .	34	45	54	61	68	76	81
10′ 9″	. .	. .	33	44	53	60	66	75	79
10′ 10″	. .	. .	32	42	51	58	65	73	77
10′ 11″	. .	. .	31	41	50	57	63	71	75
11′	. .	. .	30	40	49	55	61	69	74
11′ 1″	. .	. .	. .	39	47	54	60	68	72
11′ 2″	. .	. .	. .	38	46	52	58	66	70
11′ 3″	. .	. .	. .	37	45	51	57	65	68
11′ 4″	. .	. .	. .	36	44	50	56	63	67
11′ 5″	. .	. .	. .	35	42	49	54	61	65
11′ 6″	. .	. .	. .	34	41	47	53	60	64
11′ 7″	. .	. .	. .	33	40	46	51	59	62
11′ 8″	. .	. .	. .	32	39	45	50	57	61
11′ 9″	. .	. .	. .	31	38	44	49	56	59
11′ 10″	. .	. .	. .	30	37	42	48	54	58
11′ 11″	. .	. .	. .	. .	36	41	46	53	56

SAFE LOADS.—Continued.

Side and Combination-Construction Flat Arches.

Model-Arch (heavy lengtheners), etc. *See heading, p. 31.*

SPANS	8″ Arch	9″ Arch	10″ Arch	11″ Arch	12″ Arch	13″ Arch	14″ Arch	15″ Arch	16″ Arch
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
12′	. . .	. . .	. . .	. . .	35	40	45	52	55

EXPLANATION OF TABLE.

The safe loads given are expressed in pounds, uniformly distributed, per square foot of floor surface. The factor of safety used is 7.†

The widest span for an arch, under ordinary circumstances, is marked by the single rule across the column (followed by the small figures). Beyond this point it is recommended that a special tension member be introduced in the construction. (See Introductory Notes to this division of the catalogue.) The double rule marks the limit of the span under the building law of the State of New York.‡

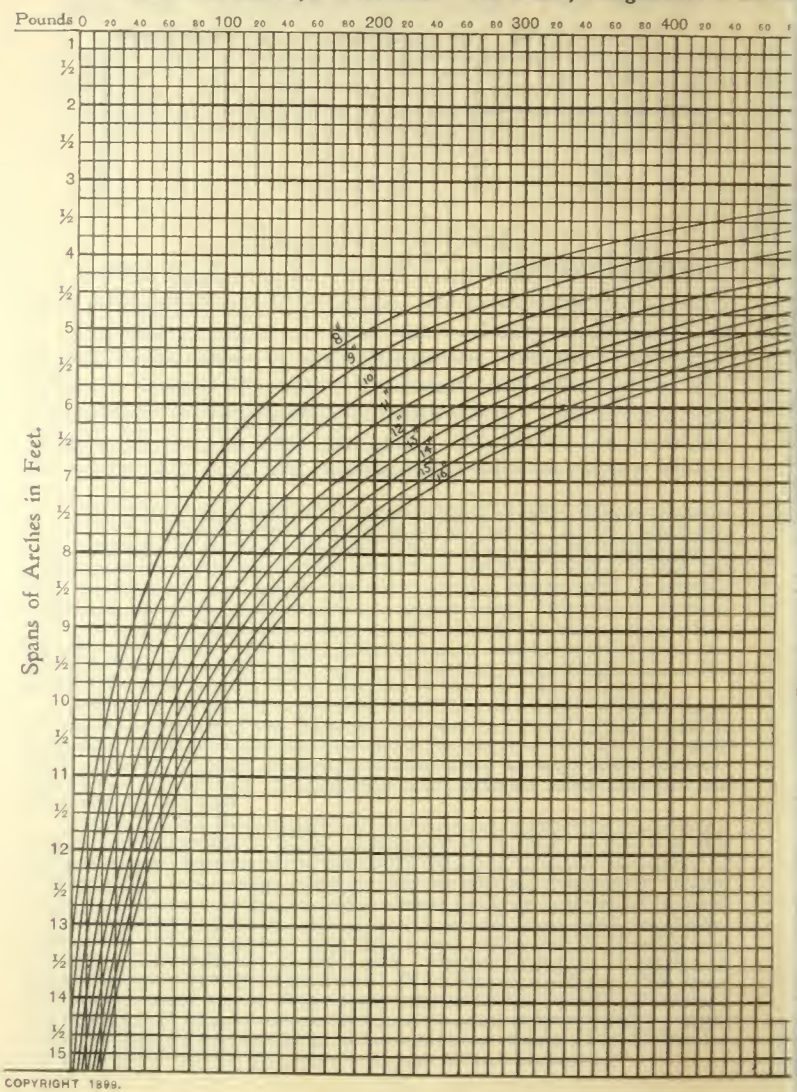
* On reference to the Table of Properties (found in Division: MISCELLANEOUS TERRA COTTA FIRE-PROOFING TABLES) it will be noticed there is a small factional difference in the least cross-sectional areas of some of the lengtheners of arches of corresponding depth of the Model-Arch and Style B series, in both the light and heavy sections, but the safe loads for these arches, under all ordinary conditions, can be considered the same, notwithstanding. The table is made on the sections of the Model-Arch; using the block having the least cross-sectional area in each size arch. The keys, however, are not necessarily included, as the Model-Arch key has a distribution of material securing extra strength for it at the point of maximum pressure—when placed in, or near, the centre of an arch.

† Owing to the fact that terra cotta floors are constructed in various ways the only factor that enters into them that has been considered in these tables in connection with an allowance for dead load is the weight of the terra cotta arch itself. Under all ordinary circumstances, considering the large factor of safety, this allowance is sufficient. In exceptional cases make the proper allowance for the additional dead load.

‡ When this law was originally enacted there were no flat floor arches in use in New York deeper than 12 inches, consequently, in the State of New York, flat arches of greater depth are not by law strictly limited as to spans; the matter, in the *City* of New York, resting practically with the Building Department. Owing to the care required in setting flat arches of wide spans, we have placed the limit (for the construction in which a special tension member is not used), for all side-construction arches of greater depth than 12-inch, within that permitted by the law for a 12-inch arch; viz., 10 feet 1 inch. The law referred to is common to many of the states throughout the Union. The words are as follows: "The space between the beams may be filled in with sectional hollow brick of hard-burned clay, porous terra cotta, or some equally good fire-proof material, having a depth of not less than one and one-quarter inches to each foot of span, a variable distance being allowed of not over six inches in the span between the beams."

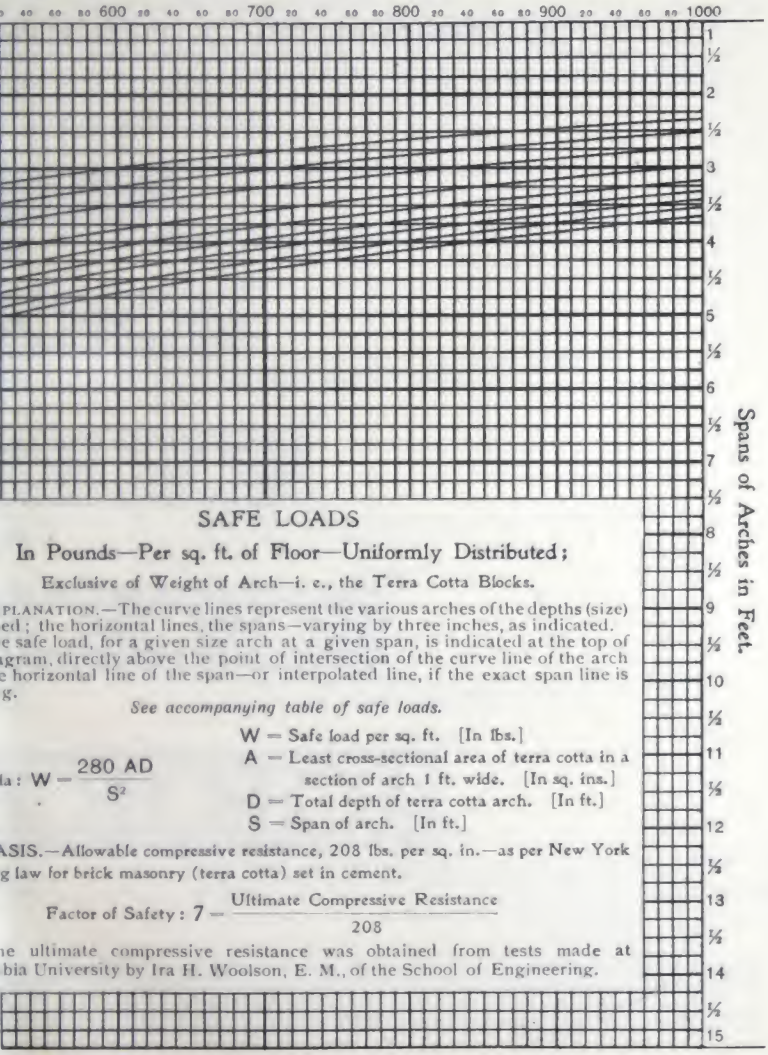
PLATE IV. DIAGRAM OF SAFE LOADS.—SIDE ANI

Model-Arch and Style B Sections.—The Heavy Lengtheners in the Si



MBINATION-CONSTRUCTION FLAT ARCHES.

ıstruction and the Light Lengtheners in the Combination-Construction.



SAFE LOADS

In Pounds—Per sq. ft. of Floor—Uniformly Distributed;

Exclusive of Weight of Arch—i. e., the Terra Cotta Blocks.

PLANATION.—The curve lines represent the various arches of the depths (size) ed; the horizontal lines, the spans—varying by three inches, as indicated. e safe load, for a given size arch at a given span, is indicated at the top of agram, directly above the point of intersection of the curve line of the arch e horizontal line of the span—or interpolated line, if the exact span line is g.

See accompanying table of safe loads.

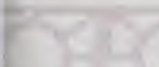
la: $W = \frac{280\ AD}{S^2}$

W = Safe load per sq. ft. [In lbs.]
A = Least cross-sectional area of terra cotta in a section of arch 1 ft. wide. [In sq. ins.]
D = Total depth of terra cotta arch. [In ft.]
S = Span of arch. [In ft.]

ASIS.—Allowable compressive resistance, 208 lbs. per sq. in.—as per New York g law for brick masonry (terra cotta) set in cement.

Factor of Safety: $7 - \frac{\text{Ultimate Compressive Resistance}}{208}$

ıe ultimate compressive resistance was obtained from tests made at bia University by Ira H. Woolson, E. M., of the School of Engineering.



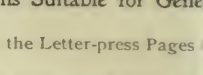
DIAGONAL-WEB SIDE-CON

MODEL-ARC

Shown in Substantially the Widest Spans Suitable for Gene

(See the Arch-Setting Tables of this Series of Arches—found in the Letter-press Pages

Batter: 1 inch to the foot. B



Average Weight, per sq ft. of floor, 18.50 lbs., including mortar joints.
Average, Terra Cotta only, 17.00 lbs.

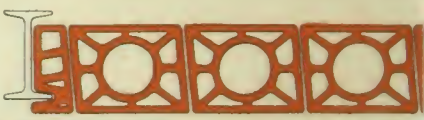
4-

Average Weight, per sq. ft. of floor, 21.00 lbs., including mortar joints.
Average, Terra Cotta only, 19.00 lbs.

5-

Average Weight, per sq. ft. of floor, 23.25 lbs., including mortar joints.
Average, Terra Cotta only, 21.00 lbs.

6-



Average Weight, per sq. ft. of floor, 25.50 lbs., including mortar joints.
Average, Terra Cotta only, 23.25 lbs.

7-

Light Sections: Average Weight, per sq. ft. of floor, 27.25 lbs., including mortar joints
Average, Terra Cotta only, 25.00 lbs.

Heavy Sections: Average Weight, per sq ft. of floor, 30.75 lbs., including mortar joints.
Average, Terra Cotta only, 28.50 lbs

8-

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* Patents applied for.

† To determine specifically the maximum span for a given size arch under definite req
of the catalogue—should be consulted. The maximum spans here shown were determined
throughout the country where the work is intrusted to the direction of men not specially qu

‡ **Factor of safety 7**; see diagramatic curves. All safe loads given throughout the
specially noted; and all coefficients relating to safe loads (for terra cotta) have this factor.

TRUCTION FLAT ARCHES.

SECTIONS.*

Use Without the Addition of a Special Tension Member.†

Catalogue—for the Construction of Arches of Various Spans and for their Safe Loads.)

shown in the Standard Sizes.

h. Span, 2 ft. 9 in.
Safe Load (for this span), 224 lbs.‡

h. Span, 3 ft. 8 in.
Safe Load (for this span), 177 lbs.‡

h. Span, 4 ft. 6 in.
Safe Load (for this span), 125 lbs.‡

l. Span, 5 ft. 6 in.
Safe Load (for this span), 100 lbs.‡

l. Span, 6 ft. 3 in.
Safe Load (for this span), light sections, 98 lbs.; heavy sections, 113 lbs.‡

SCALE: ¾ in. — 1 ft.

nts, the tables of safe loads with their diagramatic curves—found in the letter-press pages
by conditions affecting the work of setting flat arches—conditions existing in many cities
for it and to hands lacking the necessary skill.
gue (relating to hollow terra cotta construction) have this factor of safety, except where

MODEL-ARCH SECTIONS. Diagona

See Head Lines an

Light Sections: Average Weight, per sq. ft. of floor, 29.25 lbs., including mortar joints.
Average, Terra Cotta only, 27.00 lbs.

Heavy Sections: Average Weight, per sq. ft. of floor, 32.25 lbs., including mortar joints.
Average, Terra Cotta only, 30.00 lbs.

9-

Light Sections: Average Weight, per sq. ft. of floor, 30.50 lbs., including mortar joints.
Average, Terra Cotta only, 28.25 lbs.

Heavy Sections: Average Weight, per sq. ft. of floor, 33.75 lbs., including mortar joints.
Average, Terra Cotta only, 31.50 lbs.

10

Light Sections: Average Weight, per sq. ft. of floor, 32.00 lbs., including mortar joints.
Average, Terra Cotta only, 29.75 lbs.

Heavy Sections: Average Weight, per sq. ft. of floor, 36.25 lbs., including mortar joints.
Average, Terra Cotta only, 34.00 lbs.

11

Light Sections: Average Weight, per sq. ft. of floor, 33.75 lbs., including mortar joints.
Average, Terra Cotta only, 31.50 lbs.

Heavy Sections: Average Weight, per sq. ft. of floor, 38.50 lbs., including mortar joints.
Average, Terra Cotta only, 36.25 lbs.

12

:b Side-Construction Flat Arches.—Continued.

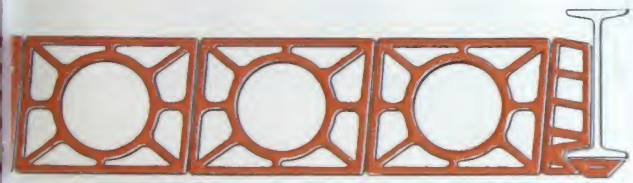
notes, Pages 29-30,

l.

Span, 7 ft.
Safe Load (for this span), light sections, 87 lbs.; heavy sections, 104 lbs.
(See foot-notes, pages 29-30.)

:h.

Span, 7 ft. 9 in.
Safe Load (for this span), light sections, 78 lbs.; heavy sections, 95 lbs.
(See foot-notes, pages 29-30.)



:h.

Span, 8 ft. 3 in.
Safe Load (for this span), light sections, 76 lbs.; heavy sections, 99 lbs.
(See foot-notes, pages 29-30.)

h.

Span, 8 ft. 9 in.
Safe Load (for this span), light sections, 86 lbs.; heavy sections, 99 lbs.
(See foot-notes, pages 29-30.)

SCALE: ¾ in. = 1 ft.

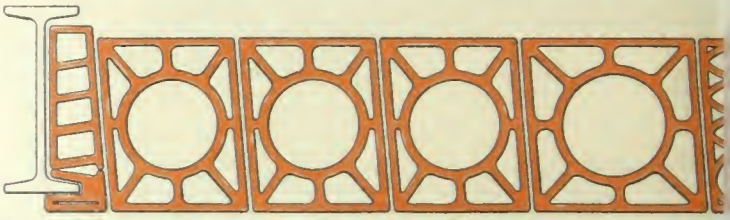
MODEL-ARCH SECTIONS. Diagonal

See Head Lines and

Light Sections. Average Weight, per sq. ft. of floor, 37.00 lbs., including mortar joints.
Average, Terra Cotta only, 34.50 lbs.

Heavy Sections: Average Weight, per sq. ft. of floor, 40.00 lbs., including mortar joints.
Average, Terra Cotta only, 37.50 lbs.

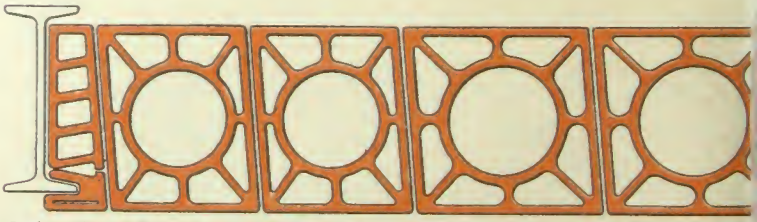
13



Light Sections: Average Weight, per sq. ft. of floor, 39.25 lbs., including mortar joints.
Average, Terra Cotta only, 36.00 lbs.

Heavy Sections: Average Weight, per sq. ft. of floor, 44.00 lbs., including mortar joints.
Average, Terra Cotta only, 40.75 lbs.

14



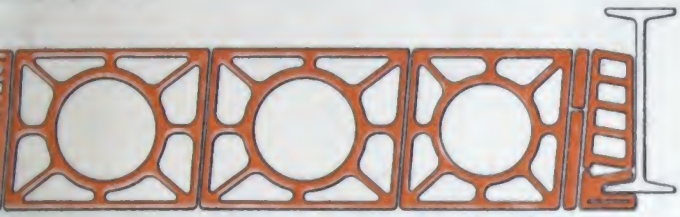
Light Sections: Average Weight, per sq. ft. of floor, 41.00 lbs., including mortar joints.
Average, Terra Cotta only, 37.50 lbs.

Heavy Sections: Average Weight, per sq. ft. of floor, 45.25 lbs., including mortar joints.
Average, Terra Cotta only, 41.75 lbs.

15

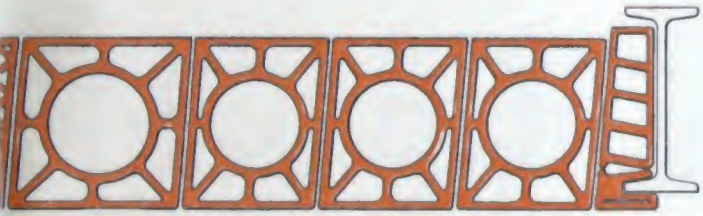
Side-Construction Flat Arches.—Continued.

notes, Pages 29-30.



ch.

Span, 9 ft. 2 in.
Safe Load (for this span), light sections, 72 lbs., heavy sections, 97 lbs.
(See foot-notes, pages 29-30.)



h.

Span, 9 ft. 6 in.
Safe Load (for this span), light sections, 74 lbs., heavy sections, 96 lbs.
(See foot-notes, pages 29-30.)

h.

Span, 9 ft. 10 in.
Safe Load (for this span), light sections, 80 lbs., heavy sections, 97 lbs.
(See foot-notes, pages 29-30.)

SCALE: ¾ in. = 1 ft.

MODEL-ARCH SECTIONS; THE BLOC

S: 4 x 2¼ *
Wt, 4.66

L: 4 x 12
Wt, 16.48

L: 4 x 7
Wt, 10.07

4-inch.

S: 5 x 2¼
Wt, 5.20

L: 5 x 14
Wt, 21.48

L: 5 x 8
Wt, 12.96

5-inch.

S: 6 x 2½
Wt, 6.90

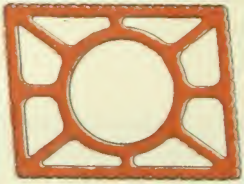
L: 6 x 8
Wt, 13.08

L: 6 x 6
Wt, 10.85

K: 6 x 6
Wt, 12.14

6-inch.

S: 7 x 2½
Wt, 7.84



L: 7 x 9
Wt, 16.39

L: 7 x 7
Wt, 14.05

K: 7 x
Wt, 12.7

7-inch.

S = Skewback; L = Lengthener; K = Key; Z = Special.

* The blocks are shown in cross-section and the dimensions given are in inches. blocks are always made 12 inches long, unless otherwise specified. In furnishing materi unless expressly ordered. In ordering separately any block always give the name of the a

† See pages 43–44 for illustrations of the Model-Arch Special Blocks (Z) for arches of al

Diagonal-Web Side-Construction Flat Arches.*

K: 4 x 6
Wt, 8.19

K: 4 x 5
Wt, 6.87

4-inch.

K: 4 x 4
Wt, 5.16

K: 4 x 3
Wt, 3.88

K: 5 x 6
Wt, 9.94

K: 5 x 5
Wt, 7.84

5-inch.

K: 5 x 4
Wt, 6.29

K: 5 x 3
Wt, 4.63

K: 6 x 5
Wt, 9.35

K: 6 x 4
Wt, 7.36

6-inch.

K: 6 x 3
Wt, 5.51

L: 6 x 10—Z †
Wt, 17.59

K: 7 x 5
Wt, 10.13

K: 7 x 4
Wt, 8.15

7-inch.

K: 7 x 3
Wt, 6.43

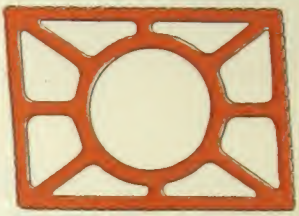
L: 7 x 11—Z †
Wt, 22.43

SCALE: 1½ in. = 1 ft.

ts expressed in pounds and given for blocks made 12 inches long. Side-construction arch
cks marked Z (special blocks, either in size or design) are not included in the shipments,
which the block belongs.

MODEL-ARCH SECTIONS; THE BLOCKS.

S: 8 x 2¾
Wt, 9.00

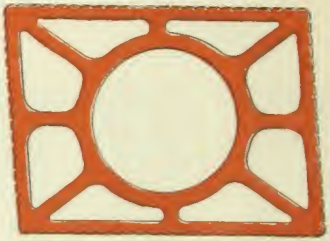


L: 8 x 11 H S: Wt, 25.54
Wt, 21.94

L: 8 x 8 H S: Wt, 19.9
Wt, 17.22

8-inch.

S: 9 x 2¾
Wt, 10.23

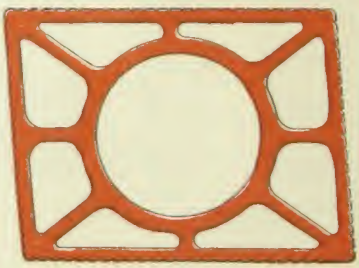


L: 9 x 12 H S: Wt, 28.75
Wt, 25.42

L: 9 x 9 H S: W
Wt, 20.53

9-inch.

S: 10 x 3
Wt, 11.47



L: 10 x 13 H S: Wt, 32.18
Wt, 28.73

L: 10 x 10 H S
Wt, 23.73

10-inch.

S = Skewback; L = Lengthener; K = Key; H S = Heavy Section. Dimensions give

...gonal-Web Side-Construction Flat Arches.—Continued.

K: 8 x 7
Wt, 15.92

K: 8 x 9
Wt, 13.78

K: 8 x 5
Wt, 10.82

K: 8 x 4
Wt, 19.06

8-inch.

K: 9 x 7
Wt, 17.23

K: 9 x 6
Wt, 14.86

K: 9 x 5
Wt, 12.50

K: 9 x 4
Wt, 10.53

9-inch.

7.84

K: 10 x 7
Wt, 19.82

K: 10 x 6
Wt, 16.73

K: 10 x 5
Wt, 13.25

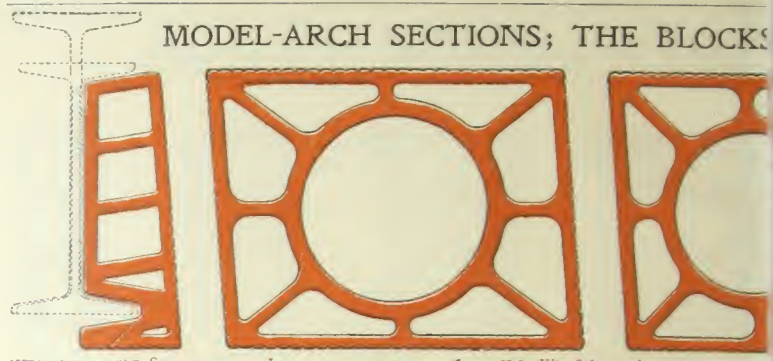
K: 10 x 4
Wt, 11.02

10-inch.

...ches, weights in pounds. See foot-note, pages 35-36.

SCALE: 1½ in. = 1 ft.

MODEL-ARCH SECTIONS; THE BLOCKS



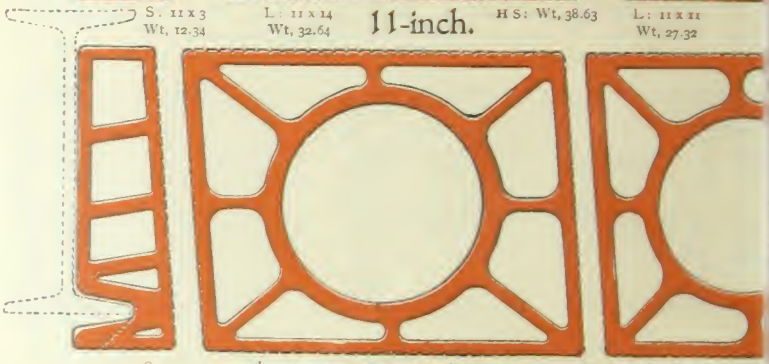
S: 11 x 3
Wt, 12.34

L: 11 x 14
Wt, 32.64

11-inch.

H S: Wt, 38.63

L: 11 x 11
Wt, 27.32



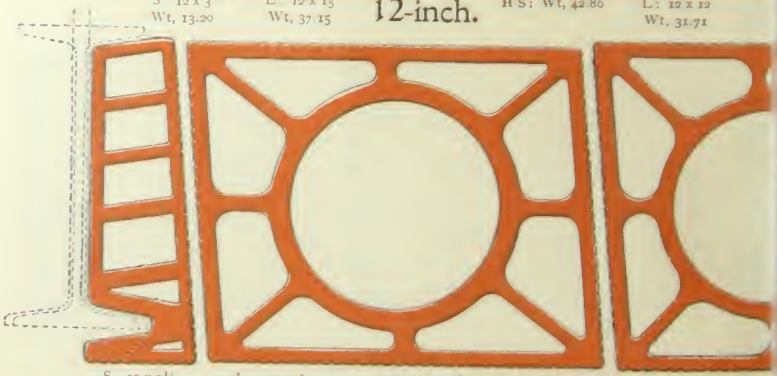
S 12 x 3
Wt, 13.20

L: 12 x 15
Wt, 37.15

12-inch.

H S: Wt, 42.86

L: 12 x 12
Wt, 31.71



S 13 x 3¼
Wt, 15.95

L 13 x 16
Wt, 44.33

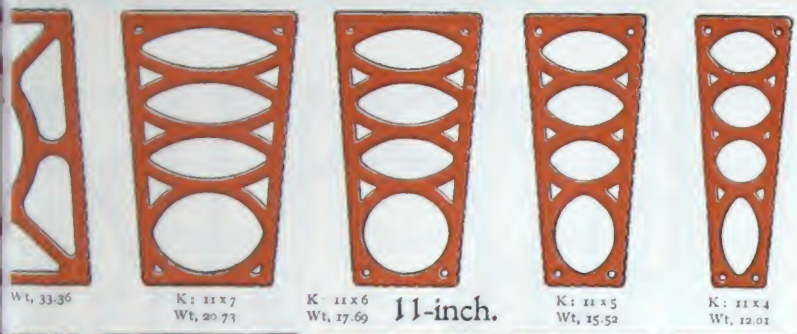
13-inch.

H S: Wt, 47.21

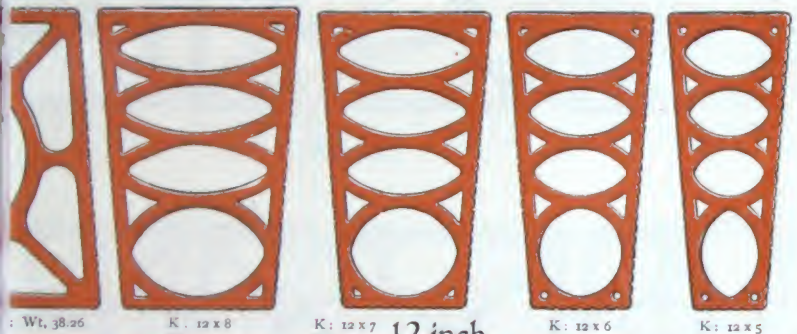
L: 13 x 13
Wt, 36.22

S — Skewback; L — Lengthener; K — Key; H S — Heavy Section. Dimensions giv

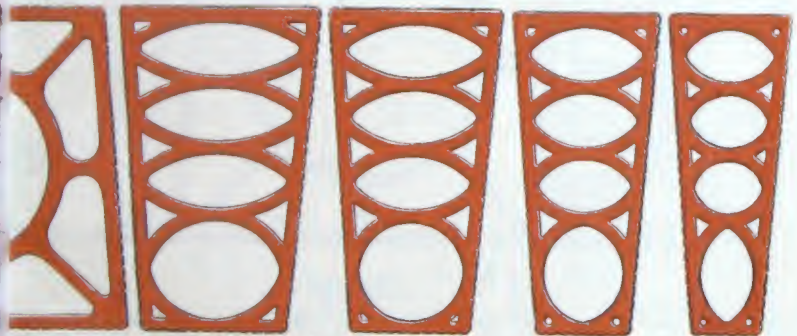
Diagonal-Web Side-Construction Flat Arches.—Continued.



Wt, 33.36 | K: 11 x 7 Wt, 20.73 | K: 11 x 6 Wt, 17.69 | **11-inch.** | K: 11 x 5 Wt, 15.52 | K: 11 x 4 Wt, 12.01



: Wt, 38.26 | K: 12 x 8 Wt, 24.27 | K: 12 x 7 Wt, 22.01 | **12-inch.** | K: 12 x 6 Wt, 18.97 | K: 12 x 5 Wt, 15.92

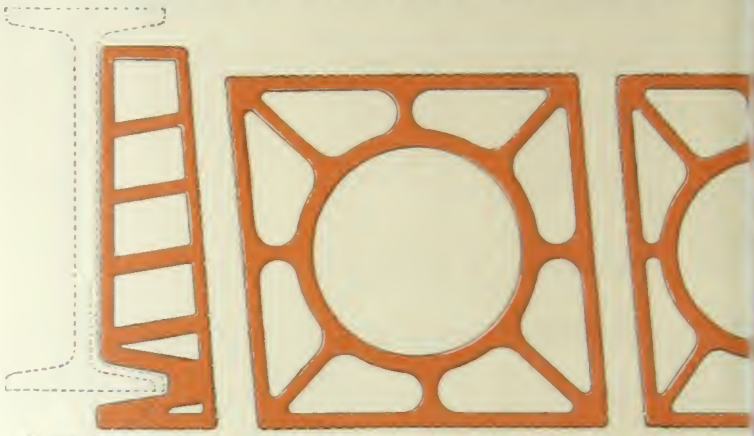


H S: Wt, 41.98 | K: 13 x 8 Wt, 24.61 | K: 13 x 7 Wt, 22.75 | **13-inch.** | K: 13 x 6 Wt, 20.03 | K: 13 x 5 Wt, 16.96

inches, weights in pounds. See foot-note, pages 35-36.

SCALE: 1½ in. = 1 ft.

MODEL-ARCH SECTIONS; THE BLOCKS



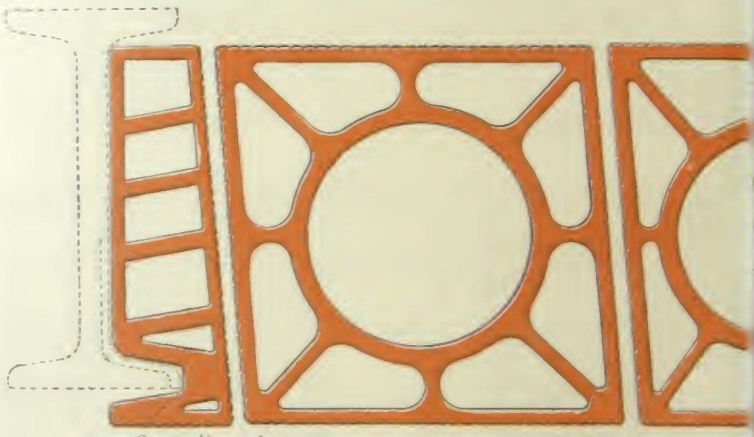
S = 14 x 3½ x 15 x 3⁹⁄₂₄*
Wt, 17.68

L = 14 x 14
Wt, 40.62

H S. Wt, 46.49

L = 14 x 11
Wt, 32.64

14-inch.



S = 15 x 3½
Wt, 18.70

L = 15 x 15
Wt, 45.46

H S. Wt, 50.69

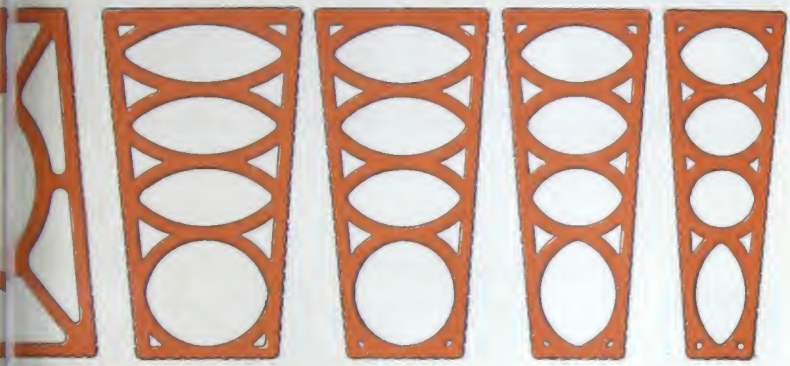
L = 15 x 12
Wt, 37.15

15-inch.

S = Skewback; L = Lengthener; K = Key; H S = Heavy Section. Dimensions

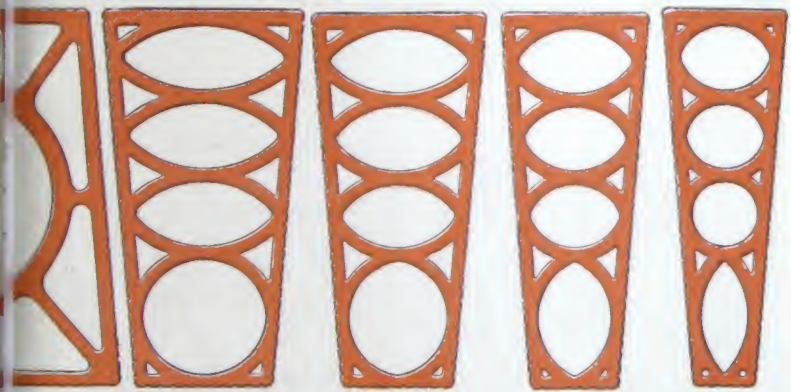
* The skewback for the 14" arch is made 15" deep.

gonal-Web Side-Construction Flat Arches. —Continued.



s: Wt, 38.63 | K: 14 x 8 Wt, 26.13 | K: 14 x 7 Wt, 23.05 | K: 14 x 6 Wt, 20.45 | K: 14 x 5 Wt, 17.12

14-inch.



s: Wt, 42.86 | K: 15 x 8 Wt, 26.59 | K: 15 x 7 Wt, 23.80 | K: 15 x 6 Wt, 20.69 | K: 15 x 5 Wt, 17.92

13-inch.

nches, weights in pounds. See foot-note, pages 35–36.

SCALE: 1½ in. = 1 ft.

MODEL-ARCH SECTIONS; SPECIAL BLOCKS (

L: 6 x 15—Z
Wt, 26.58

L: 6 x 10—Z
Wt, 17.59

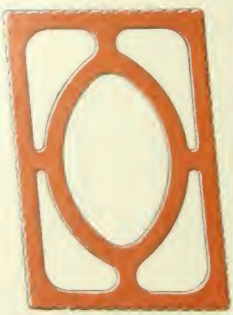
6 to 8-inch.

L: 8 x 5—Z
Wt, 12.96

L: 9 x 13—Z
Wt, 29.30

L: 9 x 7—Z
Wt, 16.39

8 to 12-inch.



L: 12 x 8—Z
Wt, 27.65

L: 12 x 4—Z
Wt, 16.48

L: 13 x 10—Z Wt, 28.73 H S: Wt, 32.18

L:
W

12 to 15-inch.

L — Lengthener; H S — Heavy Section; Z — Special. Dimensions given in inches,

Diagonal-Web Side-Construction Flat Arches.—Continued.

11—Z
22.43

L.: 7 x 4—Z
Wt, 10.07

L.: 8 x 12—Z
Wt, 27.65

L.: 8 x 6—Z
Wt, 13.08

6 to 8-inch.

x 6—Z
17.59

L.: 11 x 8—Z
Wt, 21.94

H S: Wt, 25.54

L.: 11 x 7—Z
Wt, 22.43

L.: 12 x 9—Z
Wt, 25.42

H S: Wt. 28.75

8 to 12-inch.

Z

L.: 14 x 5—Z
Wt, 21.49

L.: 15 x 6—Z
Wt, 26.58

SLAB BLOCK.

Slabs 1 in. and ¾ in. thick.

Wt, 1" slab, 7.20 per sq ft

Wt, ¾" slab, 5.40 per sq ft

Block: 15 x 7¾—Z
Wt, 49.92

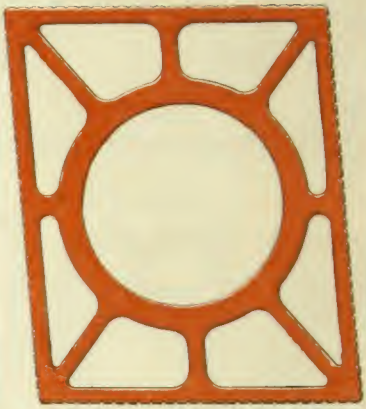
12 to 15-inch.

s in pounds. See foot-note, pages 35-36.

SCALE: 1½ in. = 1 ft.

MODEL-ARCH; SPECIAL SIZES (Z). D

S—16 x 3½
Wt. 29.79



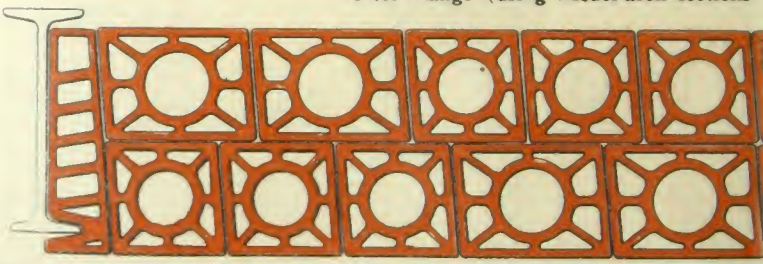
L—16 x 13—Z H S: Wt, 47.21
Wt, 44.33

L—2—8 x 11
Wt (total), 43.88

16-inch—Z.

DOUBLE FLAT-ARCH CONSTRUC

Sizes Range (using model-arch sections—



Light Sections: Average Weight, per sq. ft. of floor, 59.50 lbs., including mortar joints.
Average, Terra Cotta only, 54.00 lbs.

Heavy Sections: Average Weight, per sq. ft. of floor, 65.50 lbs., including mortar joints.
Average, Terra Cotta only, 60.00 lbs.

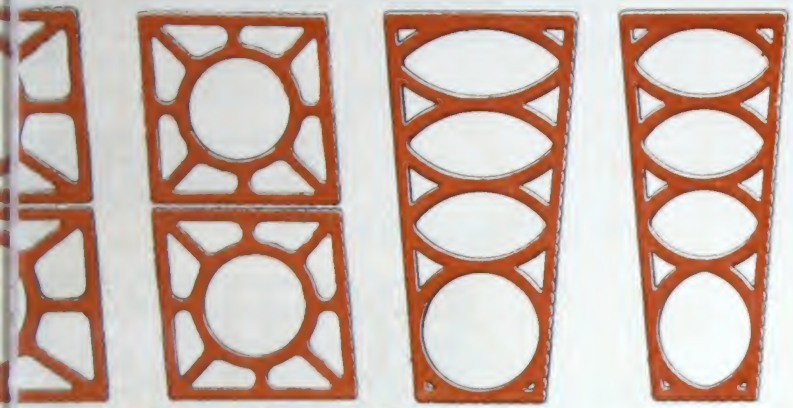
18-inch

S = SKEWBACK; L = LENGTHENER; K = KEY; H S = HEAVY SECTION. Dimensions give

* The weight of double flat-arch construction is obtained by adding one lb. per sq. f
for a "skin" coat of grout to cement the two courses together.

Safe Loads obtained by the use of the formula given with the diagramatic curves and
least cross-sectional area of the blocks used in arches not illustrated in diagramatic curves, c

nal-Web Side-Construction Flat Arches.—Continued.



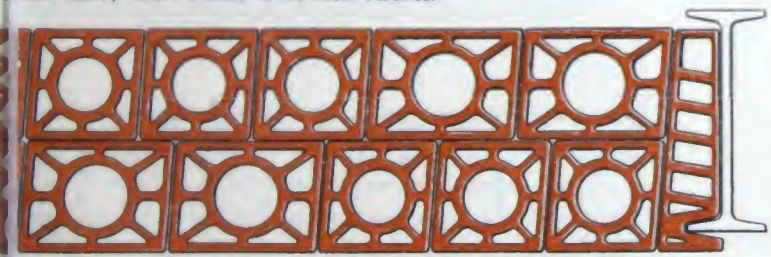
t (total), 51.68 | L: 2—8 x 8 Wt (total), 34.44 | H S: Wt (total), 39.88 | K: 16 x 8—Z Wt, 27.93 | K: 16 x 7—Z Wt, 25.68

16-inch—Z.

SCALE: 1½ in. = 1 ft.

N. Model-Arch and All Other Sections.

dard sizes) from 8-inch to 30-inch Arches.



lodel-Arch.*

Span, 10 ft.
Safe Load (for this span), light sections, 160.58 lbs.; heavy sections, 199.10 lbs.
(See foot-notes, pages 29-30.)

ches, weights in pounds.

SCALE: ¾ in. = 1 ft.

oor to the combined weight of the two arches used in forming the construction. This is

for side-construction arches, printed in the letter-press portion of the catalogue. To find the the tables of properties of arch blocks, also found in the letter-press pages of the catalogue.

PARALLEL-WEB SIDE-CON

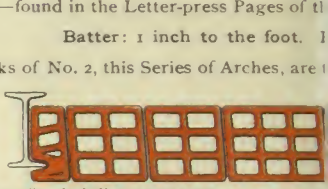
STYLE B SE

Shown in Substantially the Widest Spans Suitable for Ge

Use the Model-Arch Arch-Setting Tables—found in the Letter-press Pages of th

Batter: 1 inch to the foot. I

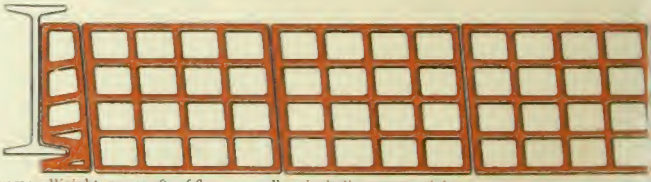
(The Standard Blocks of No. 2, this Series of Arches, are t



Average Weight, per sq. ft. of floor, 24.00 lbs., including mortar joints.
Average, Terra Cotta only, 21.50 lbs. 6

Light Sections: Average Weight, per sq. ft. of floor, 26.50 lbs., including mortar joints.
Average, Terra Cotta only, 24.25 lbs.
Heavy Sections: Average Weight, per sq. ft. of floor, 30.50 lbs., including mortar joints.
Average, Terra Cotta only, 28.25 lbs. 8

Light Sections: Average Weight, per sq. ft. of floor, 28.50 lbs., including mortar joints.
Average, Terra Cotta only, 26.25 lbs.
Heavy Sections: Average Weight, per sq. ft. of floor, 33.50 lbs., including mortar joints.
Average, Terra Cotta only, 31.25 lbs. 1(



Light Sections: Average Weight, per sq. ft. of floor, 31.50 lbs., including mortar joints.
Average, Terra Cotta only, 29.00 lbs.
Heavy Sections: Average Weight, per sq. ft. of floor, 37.75 lbs., including mortar joints.
Average, Terra Cotta only, 35.25 lbs. 1

4, 5, 7, 9, 11, 13, 14 and 15-inch Arches not included in this series, but an arch of e

---

* These arches differ from those of "No. 1" of the same series only in the size of th
in size as the style A series, and those of No. 2 the same in size as the Model-Arch series.
‡ It will be found that there is a slight difference between the least cross-section
the safe loads for both, for all practical purposes, can be considered the same.

'RUCTION FLAT ARCHES.

ONS, No. 2.*

Use Without the Addition of a Special Tension Member.†

ogue—for the Construction of Arches of Various Spans and for their Safe Loads. ‡

shown in the Standard Sizes.

ne in Size as the Standard Blocks of the Model-Arch Series.)

:h. Span, 4 ft. 6 in.
Safe Load (for this span), 125 lbs. §

:h. Span, 6 ft. 3 in.
Safe Load (for this span), light sections, 98 lbs.; heavy sections, 113 lbs. §

ch. Span, 7 ft. 0 in.
Safe Load (for this span), light sections, 78 lbs.; heavy sections, 95 lbs. §

ch. Span, 8 ft. 9 in.
Safe Load (for this span), light sections, 86 lbs.; heavy sections, 99 lbs. §

these sizes, of the same proportionate weight, will be designed and made on Special Order.

SCALE: ¾ in. = 1 ft.

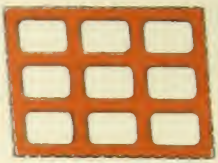
theners and keys used as STANDARD BLOCKS; the standard sizes of No. 1 being the same

† See foot-note † pages 29-30. ‡ See foot-note ‡ pages 29-30.

ıs of some of the arches of corresponding depth in the Model-Arch and Style B series, but

STYLE B SECTIONS, No. 2; THE BL

S: 6 x 2½
Wt, 6.90



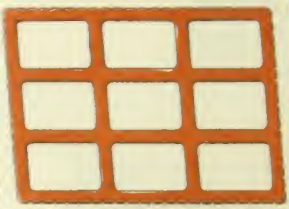
L: 6 x 8
Wt, 14.66

L: 6 x 6
Wt, 10.80

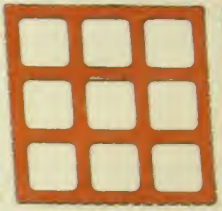
K: 6 x 6
Wt, 9.90

6-inch.

S: 8 x 2¼
Wt, 9.00



L: 8 x 11 H S: Wt. 24.95
Wt, 20.60

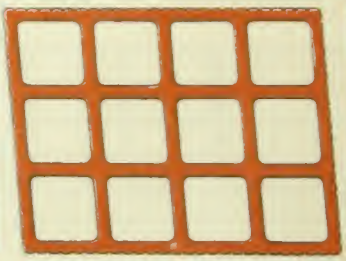


L: 8 x 8 H S: Wt. 20.49
Wt, 17.03

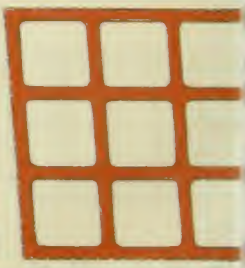
K: 8 x 7
H S: Wt

8-inch.

S: 10 x 3
Wt, 11.47



L: 10 x 13 H S: Wt. 33.86
Wt, 27.90



L: 10 x 10 H S Wt
Wt, 22.77

10-inch.

S — Skewback; L — Lengthener; K — Key; Z — Special; H S — Heavy Section. D

KS. Parallel-Web Side-Construction Flat Arches.

K: 6 x 5
Wt, 8.40

K: 6 x 4
Wt, 6.60

K: 6 x 3
Wt, 5.40

L: 6 x 10—Z
Wt, 16.80

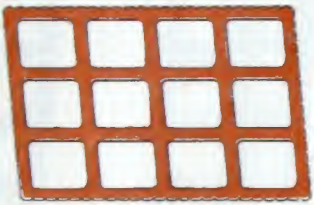
S: 6 x 4—Z
Wt, 8.04

6-inch.

K: 8 x 6 Wt, 10.89
H S: Wt, 13.27

K: 8 x 5 Wt, 9.09
H S: Wt, 11.81

K: 8 x 4 Wt, 7.59
H S: Wt, 9.22



L: 8 x 12
Wt, 23.40

H S: Wt, 27.90

8-inch.

K: 10 x 7 Wt, 14.52
H S: Wt, 17.75

K: 10 x 6 Wt, 12.54
H S: Wt, 15.29

K: 10 x 5 Wt, 10.56
H S: Wt, 12.82

K: 10 x 4—Z
Wt, 8.58
H S: Wt, 10.35

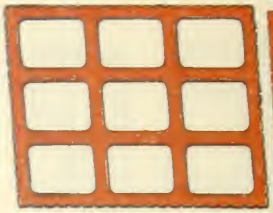
L: 10 x 6—Z
Wt, 16.80

10-inch.

SCALE: 1½ in. = 1 ft.

ions given in inches, weights in pounds. See foot-note, pages 35-36.

STYLE B SECTIONS, No. 2; THE BLOCK



L: 8 x 10—Z Wt, 19.40 H S: Wt, 23.45

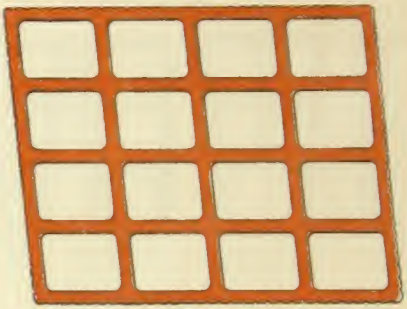
L: 8 x 6—Z Wt, 14 66

K: 8 x 8—Z Wt, 13.98 H S: Wt, 16 90

S: 8 x 4—Z Wt, 10 60

8-inch.

S: 12 x 3 Wt, 13.20

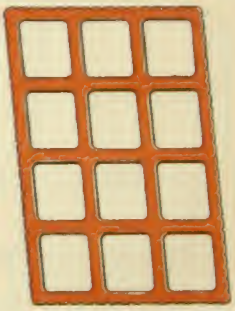


L: 12 x 15 Wt, 34.20 H S: Wt, 42.22

12-inch.

K: 12 x 6 Wt, 15.42 H S: Wt, 18 73

K: 12 x 5 H S: Wt, 15 98 Wt, 13.20



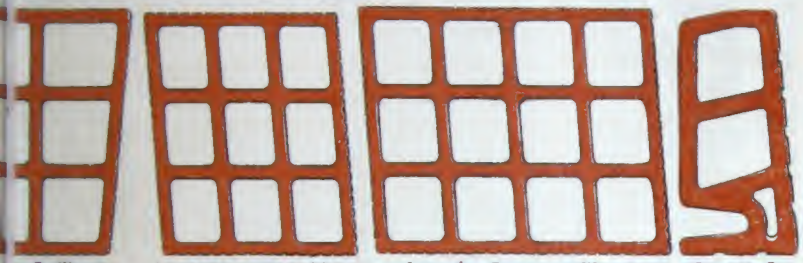
L: 12 x 8—Z H S: Wt, 27 00 Wt, 23.40

L: 12 x 10— Wt, 26.6

12-inch.

S — Skewback; L — Lengthener; K — Key; Z — Special; H S — Heavy Section.

Parallel-Web Side-Construction Flat Arches.—Continued.



3—Z Wt, 15.72
Wt, 19 09

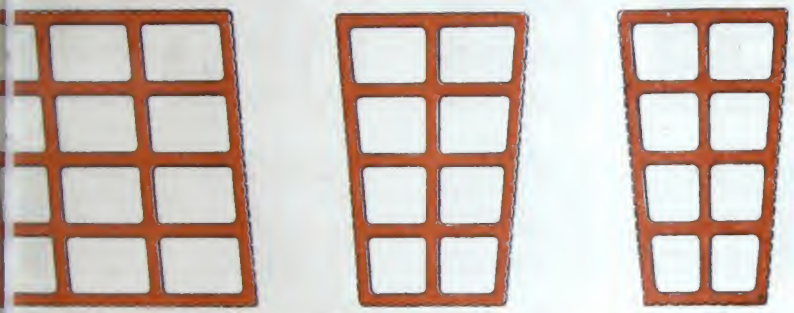
L: 10 x 8—Z
Wt, 19 40

H S: Wt, 23.45

L: 10 x 12—Z
Wt, 26.69
H S: Wt, 32.32

S: 10 x 4—Z
Wt, 14.70

10-inch.



z x 12
29.40

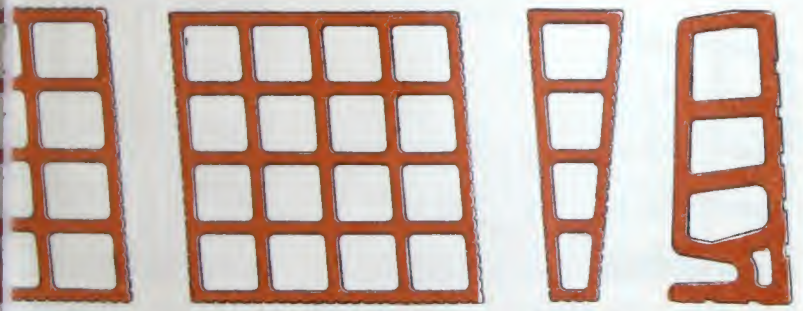
H S: Wt, 36.53

K: 12 x 8
Wt, 19.14

H S:
Wt, 23.37

K: 12 x 7 Wt, 17.84
H S: Wt, 21.49

12-inch.



H S: Wt, 32 32

L: 12 x 12—Z
Wt, 32.16

K: 12 x 4—Z
Wt, 10.26

S: 12 x 4—Z
Wt, 17.06

12-inch.

ions given in inches, weights in pounds. See foot-note, pages 35-36. SCALE: 1½ in. — 1 ft.

MODEL-ARCH COM

Made and Sh

S. 6 x 2½
Wt. 6.90

No. 1. Wt, 19.16

No. 1. Wt, 15.84

No. 1. Wt, 21.64

No. 1.

No. 2. Wt, 11.76

No. 2. Wt, 12.16

No. 2. Wt, 14.36

No. 2.

S. 6 x 2½
Wt. 6.90

S. 7 x 2¾
Wt, 7.84

6 to 12-inch.

S. 8 x 2¾
Wt, 9.00

S.
Wt

No. 1. Wt, 21.76

No. 1. Wt, 23.4

No. 2. Wt, 20.30

S. 13 x 3¾
Wt, 15.95

13 to 15-inch.

S. 14

S — SKEWBACK. Dimensions given in inches, weights in pounds. The size and weight

* The combination blocks designated No. 1 contain the top sections of the skewbacl

IATION SKEWBACKS.

*Blocks as Shown.**

No. 1. Wt, 29.16

No. 2. Wt, 16.70

S: 10 x 3
Wt, 11.47

No. 1. Wt, 32.04

No. 2. Wt, 17.30

S: 11 x 3
Wt, 12.34

No. 1. Wt, 34.46

No. 2. Wt, 18.34

S: 12 x 3
Wt, 13.20

6 to 12-inch.

No. 1. Wt, 24.60

No. 2. Wt, 23.93

S: 15 x 1½
Wt, 18.70

No. 2. Wt, 25.60

13 to 15-inch.

SCALE: 1½ in. = 1 ft.

x 3⁹/₁₆)†
58

skewback complete is given at the bottom of each set of combination blocks.

hose designated No. 2 the bottom sections. † The Skewback for the 14″ Arch is made 15″ deep.

I-BEAM SOFFITS.

B: 3 Wt, 5.72
1 piece, 1.43

B: 3½ Wt, 6.96
1 piece, 1.74

B: 4 Wt, 8.00
1 piece, 2.15

B: 4½ Wt, 8.76
1 piece, 2.19

B: 5 Wt, 11.28
1 piece, 2.82

ARCH FILLERS

F: 6
Wt, 5.18

F: 5
Wt, 4.24

F: 4
Wt 3.30

F 3
Wt, 2.36

F: 5 x 8½ Wt, 10.56
Wt., per ft, 14.45

F: 4 x 8½—2 pieces
Wt (1 piece), 5.84 Wt., per ft, 8.24

F: 6 x 8½ (made in pairs)
Wt (1 piece), 10.11 Wt., per ft, 11.90

F 5 x 8½ (made in pairs)
Wt (1 piece), 8.98 Wt., per ft, 12.68

F: 10 x 10 (made in pairs)
Wt (1 piece), 11.86 Wt., per ft, 14.23

F: 8 x 8 (made in pairs)
Wt, 8.72 Wt., per ft, 13.08

F: 9 x 16
Wt, 19.93 Wt., per ft

B = Beam; F = Filler. Dimensions given in inches, weights in pounds, and for blocks

our Pieces to the Block.

1: 5¾ Wt, 12.48
1 piece, 3.12

B: 6 Wt, 15.29
1 piece, 3.82

B: 6½ Wt, 16.80
1 piece, 4.20

B: 7 Wt, 19.56
1 piece, 4.89

D ROOF GRADERS.

4 Wt, 3.14 F: 3 x 4 Wt, 2.76
per ft, 9.42 Wt., per ft, 8.28

F: 6 x 11½ (made in pairs)
Wt, 9.95

F: 5 x 9½ (made in pairs)
Wt (1 piece), 6.77 Wt., per ft, 8.55

F: 4 x 12—2 pieces
Wt (1 piece), 10.10 Wt., per ft, 10.10

F: 3 x 12—2 pieces
Wt (1 piece), 8.97 Wt., per ft, 8.97

F: 6 x 6 (made in pairs)
Wt (1 piece), 5.36
Wt., per ft, 10.72

F: 8 x 15
Wt, 16.04 Wt., per ft, 12.83

F: 6½ x 12
Wt, 13.71 Wt., per ft, 13.71

hes long.

SCALE: 1½ in. = 1 ft.

SIDE-CONSTRUCTION ARCH

STANDARD METHOD, No. 1:—Affording the maximum of strength and

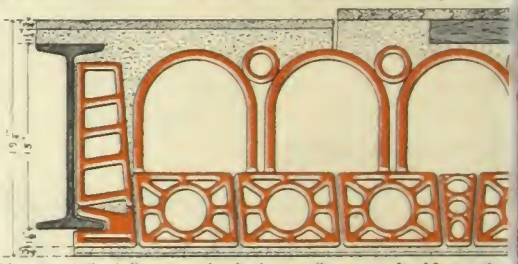
(a 1.)

(a 1.) **Detail Description.** ¾" artificial stone (or floor tile) finished floor (140 lbs., cu. ft.), 7.29; cinder concrete (66 lbs., cu. ft.), 9.63; 10" terra cotta arch (model-arch; heavy section), 33.75; ½" rough mo ceiling (103 lbs., cu. ft.), 4.29; ¼" plaster finish to ceiling (72 lbs., cu. ft.), 1.50; 9" I-beams (21 lbs., lin. ft.) this span (7' 9") = 2.71. Total depth of construction, 13¼"; total weight per sq. ft. of floor, 59.17 lbs.

Safe load, for this span (7' 9") for the artificial stone floor construction, 95 lbs.; for the wooden floor construction, 7

SPECIAL METHOD, with Arch Fillers:—Affording extra l

(a 2.)

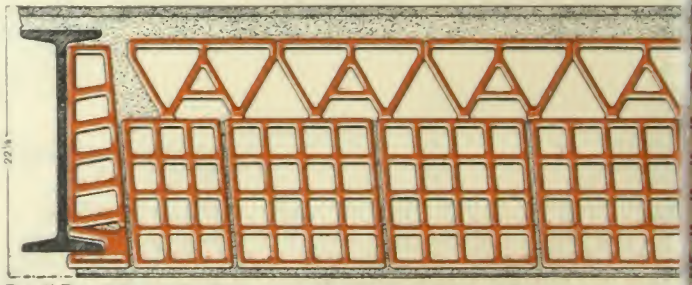


(a 2.) **Detail Description.** ¾" artificial stone (or floor tile) finished floor (140 lbs., cu. ft.), 8.75; 1¾" cinder concrete, least depth; total average 2¼" (66 lbs., cu. ft.), 12.38; 10" and 3" terra cotta fillers (sections, F: 10 x 10 and F: 3), 16.81; 6" terra cotta arch (model-arch section), 23.25; ½" rough mortar ceiling (103 lbs., cu. ft.), 4.29; ¼" plaster finish to ceiling (72 lbs., cu. ft.), 1.50; 15" I-beams (42 lbs., lin. ft.) for this span (5' 3") = 8.00. Total depth of construction, 19¾"; total weight per sq. ft. of floor, 74.98 lbs.

Safe load, for this span (5' 3"=4' 5" between skewbacks), 131 lbs. per sq. ft. of floor (safety

STANDARD METHOD, No. 2; with Arch Fillers:—Affording a light construction, and

(a 3.)



(a 3.) **Detail Description.** ¾" artificial stone (or floor tile) finished floor (140 lbs., cu. ft.), 8.75; 2¼" ci concrete (66 lbs., cu. ft.), 11.69; 6⅛" terra cotta fillers (section, F: 6⅛ x 12), 13.71; 12" terra cotta arch (Sty No. 1; heavy section), 41.25; ½" rough mortar ceiling (103 lbs., cu. ft.), 4.29; ¼" plaster finish to ceiling (72 cu. ft.), 1.50; 18" I-beams (55 lbs., lin. ft.) for this span (8' 10") = 6.23. Total depth of construction, 22¼"; weight per sq. ft. of floor, 87.42 lbs.

Safe load, for this span (8' 10"=7' 11" between skewbacks) for the artificial stone floor construc

For safe loads, other spans, see: Tables, pp. 23 and 3

.—Typical Methods of Construction.

ıum of steel and concrete.—In All Sections; Style A, Style B and Model-Arch.

(b 1.)

(b 1.) **Detail Description.** ⅞ rock maple flooring (48 lbs., cu. ft.), 3.50; 2¼" cinder concrete; average, less sleepers set 16" on centres, 18½" (66 lbs., cu. ft.), 9.63; 2" x 4" spruce sleepers = ⅛" per sq. ft. of floor (31 lbs., cu. ft.), 1.29; 10" terra cotta arch (model-arch; light section), 30.50; ⅛" rough mortar ceiling (103 lbs., cu. ft.), 4.29; ¼" plaster finish to ceiling (72 lbs., cu. ft.), 1.50; 9" I-beams (21 lbs., lin. ft.) for this span (7' 9") = 9.71. Total depth of construction, 11⅞", total weight per sq. ft. of floor, 53.55 lbs.

r sq. ft. of floor (safety factor 7). For safe loads, other spans, see: Tables, pp. 23 and 31; Division: Safe Load Tables

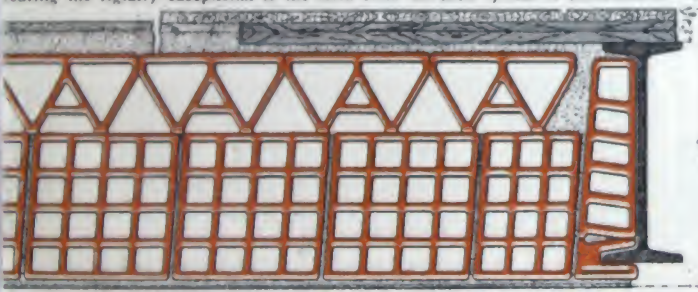
ace—with terra cotta protection—for use as required. All Sections.

(b 2.)

(b 2.) **Detail Description.** ⅞" rock maple flooring (48 lbs., cu ft.), 3.50; 2½" cinder concrete; average, less sleepers set 16" on centres, 21½" (66 lbs., cu. ft.), 13.75; 2" x 4" spruce sleepers = ⅛" per sq ft. of floor (31 lbs., cu. ft.), 1.29; 10" and 3" terra cotta fillers (sections, F; 10 x 10 and F; 3), 16.81; 6" terra cotta arch (model-arch section), 23.25; ⅛" rough mortar ceiling (103 lbs., cu. ft.), 4.29; ¼" plaster finish to ceiling (72 lbs., cu. ft.), 1.50; 15" I-beams (42 lbs., lin. ft.) for this span (5' 3") = 8.00. Total depth of construction, 20¼"; total weight per sq. ft. of floor, 72.39 lbs.

ft. For safe loads, other spans, see: Table, p. 23; Division: Safe Load Tables—of this Catalogue.

rcuring the rigidity exceptional to the terra cotta flat-arch system of construction. All Sections.



(b 3.)

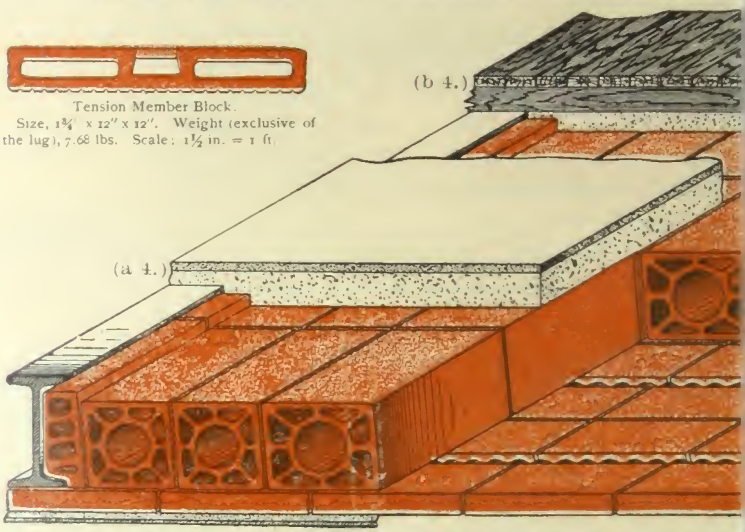
(b 3.) **Detail Description.** ⅞" rock maple flooring (48 lbs., cu. ft.), 3.50; 2¼" cinder concrete; average, less sleepers set 16" on centres, 28½" (66 lbs., cu. ft.), 13.07; 2" x 4" spruce sleepers = ⅛" per sq. ft. of floor (31 lbs., cu. ft.), 1.29; 6½" terra cotta fillers (section, F; 6½ x 12), 13.71; 12" terra cotta arch (Style B, No. 1; light section), 35.00; ⅛" rough mortar ceiling (103 lbs., cu. ft.), 4.29; ¼" plaster finish to ceiling (72 lbs., cu. ft.), 1.50; 18" I-beams (55 lbs., lin. ft.) for this span (8' 10") = 6.22. Total depth of construction, 23"; total weight per sq. ft. of floor, 78.58 lbs.

9 lbs.; for the wooden floor construction, 111 lbs. per sq. ft. of floor (safety factor 7).
sion: Safe Load Tables—of this Catalogue.

SCALE: ¼ in. — 1 ft.

SIDE-CONSTRUCTION ARCHES

STANDARD METHOD, No. 3 [Tension Member Construction, No. 1]:—A

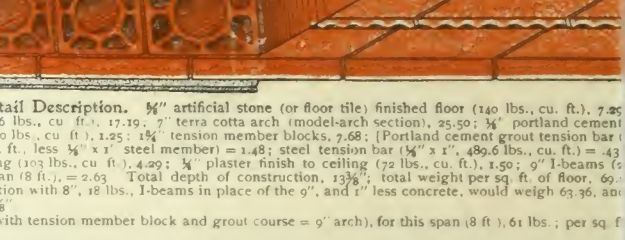


Tension Member Block.
Size, 1¾" x 12" x 12". Weight (exclusive of the lug), 7.68 lbs. Scale: 1½ in. = 1 ft.

(a 4.) **Detail Description.** ⅝" artificial stone (or floor tile) finished floor (140 lbs., cu. ft.), 7.25; cinder concrete (66 lbs., cu. ft.), 17.19; 7" terra cotta arch (model-arch section), 25.50; ¼" portland cement bonding course (120 lbs., cu. ft.), 1.25; 1⅝" tension member blocks, 7.68; [Portland cement grout tension bar (1 1/16", 120 lbs., cu. ft., less ⅛" x 1" steel member) = 1.48; steel tension bar (¼" x 1", 489.6 lbs., cu. ft.) = .43; rough mortar ceiling (103 lbs., cu. ft.), 4.29; ¼" plaster finish to ceiling (72 lbs., cu. ft.), 1.50; 9" I-beams (5 lin. ft.), for this span (8 ft.), = 2.63. Total depth of construction, 13⅜"; total weight per sq. ft. of floor, 69. The same construction with 8", 18 lbs., I-beams in place of the 9", and 1" less concrete, would weigh 63.96, and a total depth of 12⅜"

Safe load (7" arch with tension member block and grout course = 9" arch), for this span (8 ft.), 61 lbs.; per sq. f

RAISED ARCH:—Affording a light method of construction; securing the firm resistanc the section of the beam in tension. Second only to the terra c



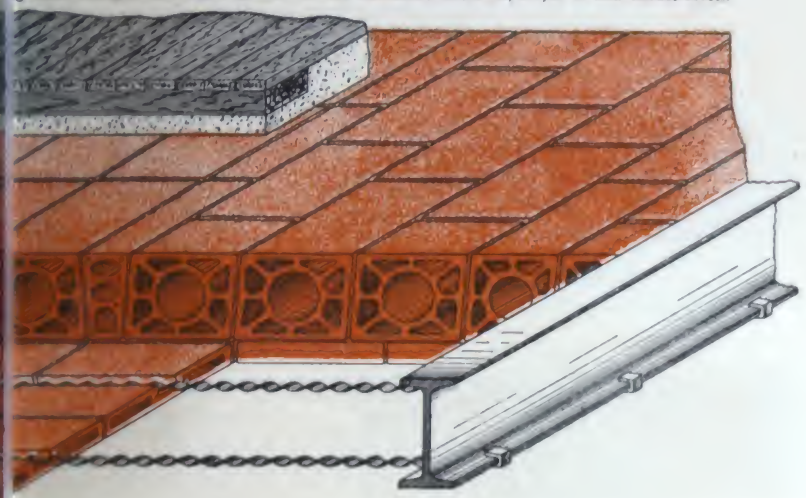
Safe load for this span (8' 6") for the artificial stone floor construction 73 lbs., for the wooden floor construction 61 lbs.; per sq. ft. of floor (safety factor 7).

The following details of construction, based on details, "a Details "a 1" and "b 1" can be commonly used to o

Stone Floor Construction. ⅝" artificial stone (or floor tile) fi floor (140 lbs., cu. ft.), 7.29; 1¾" cinder concrete (66 lbs., cu. ft.), 9.0 terra cotta arch (model-arch: heavy section), 33.75; ½" rough mortar ((103 lbs., cu. ft.), 4.29; ¾" plaster finish to ceiling (72 lbs., cu. ft.), 1.5 I-beam (55 lbs., lin. ft.), for this span (8' 6"). = 6.47. EXTENSION WO 2 blocks, section, 1-A 2, model-arch girder-covering, weight, 6.16 lbs. = 12.32 lbs., 1 partition block, 4" x 10" each beam), 11.03 lbs., 1½ ft. of extra ceiling (9" on each side), 8.69; 2 angles, 2" x 2", 2.5 lbs., = 5 lbs.; t 37.04 ÷ 8' 6" (the span of the arch) = 4.36 lbs.—per sq. ft. for the whole arch. RESULT.—Total depth of flo construction, 13⅜", total weight of entire construction, per sq. ft. of floor, 67.29 lbs.

ypical Methods of Construction.—Continued.

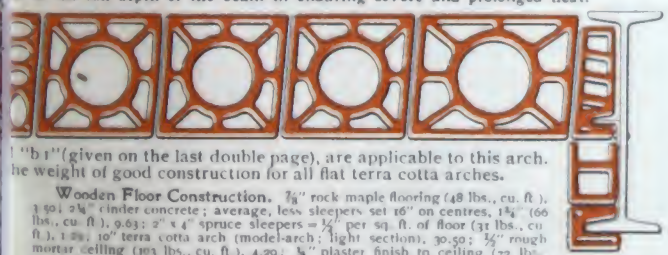
g extra strength and wider spans. In All Sections; Style A, Style B and Model-Arch.



(b 4.) **Detail Description.** ¼" rock maple flooring (48 lbs., cu. ft.), 3.50; 3⅛" cinder concrete, average, less sleepers set 16" on centres, 3⅛", 18.56; 2" x 4" spruce sleepers = ½" per sq. ft. of floor (31 lbs., cu. ft.), 1.29; 7" terra cotta arch (model arch section), 25.50; ½" portland cement grout bonding course (120 lbs., cu. ft.), 1.25; 1¾" tension member blocks, 7.68; [Portland cement grout tension bar (1⅝" x 1'1 5/16", 120 lbs., cu. ft., less ¾" x 1" steel member) = 1.48; steel tension bar (¾" x 1", 489.6 lbs., cu. ft.) = 43.] ½" rough mortar ceiling (103 lbs., cu. ft.), 4.29; ¾" plaster finish to ceiling (72 lbs., cu. ft.), 1.50; 9" I-beams (21 lbs., lin. ft.), for this span (8 ft.), = 2.63. Total depth of construction, 14⅝"; total weight per sq. ft. of floor, 68.11 lbs. The same construction with 8", 18 lbs., I-beams in place of the 9", and 1" less concrete, would weigh 62.23, and have a total depth of 13⅝"

(factor of safety 7) For safe loads, other spans, see Table, p. 23; Division SAFE LOAD TABLES—of this catalogue

e terra cotta flat arch to crippling and lateral deflection of the beam, and terra cotta protection to h of the full depth of the beam in enduring severe and prolonged heat.



For safe loads other spans, see Table, pp. 23 and 31, Division: SAFE LOAD TABLES—of this catalogue

"b 1" (given on the last double page), are applicable to this arch. he weight of good construction for all flat terra cotta arches.

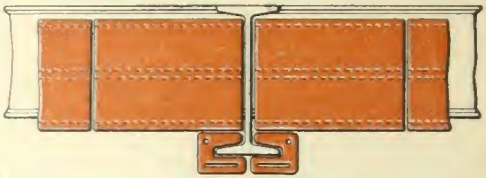
Wooden Floor Construction. ⅞" rock maple flooring (48 lbs., cu. ft.), 3.50; 2¾" cinder concrete; average, less sleepers set 16" on centres, 1¾" (66 lbs., cu. ft.), 9.63; 2" x 4" spruce sleepers = ½" per sq. ft. of floor (31 lbs., cu. ft.), 1.29; 10" terra cotta arch (model-arch; light section), 30.50; ½" rough mortar ceiling (103 lbs., cu. ft.), 4.29; ¾" plaster finish to ceiling (72 lbs., cu. ft.), 1.50; 18" I-beam (55 lbs., lin. ft.), for this span (8' 6"), = 6.47. EXTENSION WORK.—2 blocks, section, 1-A 2, model-arch girder-covering, weight 6.16 lbs. = 12.32 lbs.; 1 partition block, 4" x 9" (½ on each beam), 11.05 lbs.; 1½ ft. of extra ceiling (9" on each side), 8.69; 2 angles, 2" x 2" x 2.5 lbs. = 5 lbs.; total = 37.04 = 8' 6" (the span of the arch) = 4.36 lbs.—per sq. ft. for the whole arch. RESULT.—Total depth of floor arch construction, 13⅛"; total weight of entire construction, per sq. ft. of floor, 61.54 lbs.

SCALE: ¾ in. = 1 ft.

GIRDER COVERING CONSTRU

THE FLAT SIDE-CONSTRUCTION SYST

(1.) SHOWN WITH SINGLE

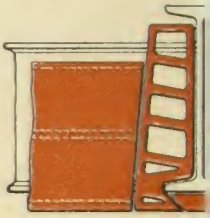


Composed of: 1-A, Model-Arch Girder Blocks.

Composed of: 6-C,

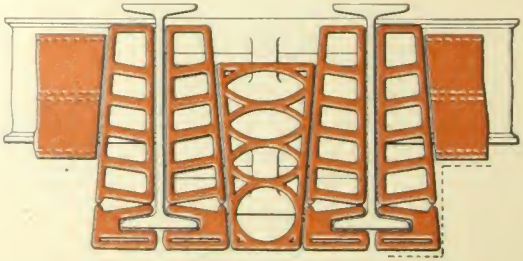
(2.) SHOWN WITH DOUBLE

Composed of: 4-A, Model-Arch, X-height, Girder Blocks and 10-inch Skewbacks (Model-Arch).



Composed of:
and 15-inch S

(3.) SHOWN WITH SINGLE ARC



Composed of:
18-inch Combination Skewbacks (Model-Arch)
and 15 x 8-inch Key (Model-Arch).

Composed of: 4-inch Beam Soffi
3-B, 4, Model-Arch Girder
12 x 3-inch Girder Fil

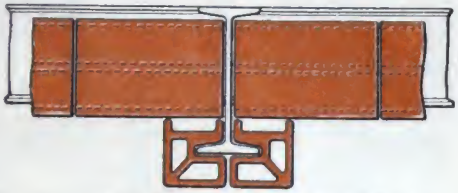
* The Wedge is introduced, in girder construction, where single batter arch blocks are u

ON.—For All Systems of Floor Arches.

; in Both the Single and Double Batter Methods:

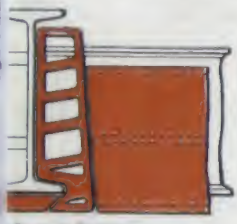
TTER FLOOR ARCH BLOCKS,

rch, X-height, Girder Blocks.



Composed of: 4-B, Model-Arch, Z-height, Girder Blocks.

TTER FLOOR ARCH BLOCKS,

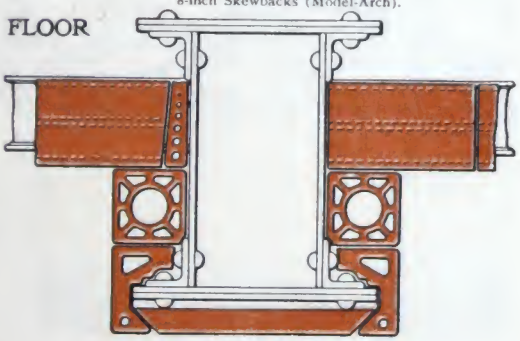


Beam Soffit Block
ks (Model-Arch).

Composed of:
8-inch Skewbacks (Model-Arch).

ND DOUBLE BATTER FLOOR LOCKS.

12-inch Skewbacks (Model-Arch).
12 x 6-inch Key (Style B).
vbacks and Wedge, No. 1.*



Composed of:
2-inch Beam Soffit Block. Plate Girder Skewbacks, No. 1.
6 x 6-inch Arch Blocks (Model-Arch) and Wedge, No. 1.*

SCALE: ¾ in. = 1 ft.

th batter skewback instead of the regular upright girder skewback. See pages 69-70.

GIRDER COVERING CO

For All Syste

G S: 15 x 5
Wt, 25.61
F P: Wt, 21.34

P G S: 14 x 6¾
Wt, 20.92
F P: Wt, 17.43

P G S: 14 x 5
Wt, 26.70
F P Wt, 22.25

G S: 12 x 5¼
Wt, 19.22
F P: Wt, 16.02

Batter: 1 in. to 1 ft.
With single batter arch blocks use 1" batter wedge.
See pages 69-70.

S 6 x 4
Wt, 8.04

S: 8 x 4
Wt, 10.60

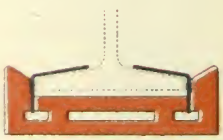
S: 10 x 4
Wt, 14.70

S: 12 x 4
Wt, 17.06

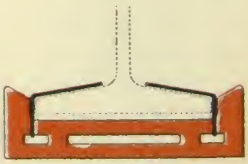
G F S: 12 x 3
Wt, 10.10

Ba

G F S
Wt,



F C: 2¾ x 8½
Wt, 7.77
F P: Wt, 6.48



F C: 3 x 9½
Wt, 8.31
F P: Wt, 6.98

L P G S: 7 x 6
Wt (1 piece), 11.71
F P Wt, 9.76

S = Skewback; R S = Raised Skewback, G S = Girder Skewback; P G S = Plate
F C = Flange Covering; F P = Full Porous. Dimens

N'RUCTION: THE BLOCKS.

of Floor Arches.

x 4
77
11.64

G S: 12 x 3¾
Wt, 17.74
F P Wt, 14.78

P G S: 9 x 5½
Wt, 15.27
F P: Wt, 12.73

P G S. 9½ x 6
Wt, 18.87
F P Wt, 15.73

Beam Soffit Block
5 x 10⅛ x 12 (5" Partition)
F P: Wt, 12.03

in. to 1 ft.

R S: 9 x 3
Wt, 10.23

R S. 13 x 3
Wt, 12.73

R S: 15½ x 3
Wt, 19.12

F C: 3 x 3¾
Wt, 4.20
F P: Wt, 3.50

F C: 3 x 3¾
Combination Block
Wt (total), 16.80
F P: Wt, 14.00

1 A. P G S: 7½ x 7½
Wt (1 piece), 13.50
F P. Wt, 11.25

2. P G S: 9 x 6
Wt, 14.31
F P: Wt, 11.93

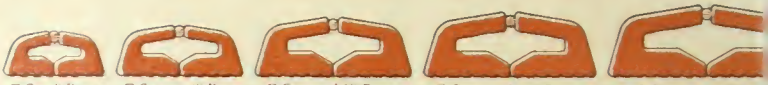
2-A. P G S: 9 x 7½
Wt, 17.06
F P. Wt, 14.22

ER SKEWBACK; G F S = GIRDER FILLER SKEWBACK.
iven in inches; weights in pounds, and for blocks 12 inches long.

SCALE: 1½ in. = 1 ft.

GIRDER COVERING CONST

For All Syst



F C : 3" Beams Wt (1 piece), 1.31 | F C : 4 to 6" Beams Wt (1 piece), 1.80 | F C : 7 and 8" Beams Wt (1 piece), 2.67 | F C . 9 and 10" Beams Wt (1 piece), 3.25 | F C : 12 to 15" Bea Wt (1 piece), 4.0

LARGE SIZE MODEL-ARCH COMBINATION SKEWBACK

Covering for 12 to

No. 1. Wt, 23.40

S : 14 x 3½ (1

No. 1. Wt, 21.76

No. 2. Wt, 20.30

S : 13 x 3¼ Wt, 15.95

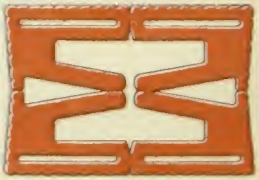
Covering for 15 to 2

No. 1. Wt, 32.40

S : 18 x 3

No. 1. Wt, 26.50

No. 2. Wt, 26.16



S : 16 x 3½ Wt, 19.79

S = Skewback; F C = Flange Covering; B S = Beam Soffit. Dimensions given i

CTION: THE BLOCKS.—Continued.

of Floor Arches.

BS 1½" to 3" thick, and any length or width required

BS 2" to any thickness, and any length or width required

BS ½" to 3" thick, and any length or width required

BS 2" to any thickness, and any length or width required

In Single Batter Arch Construction to be used with the 1" Batter Wedge. See pages 69-70.

h Single I-Beam Girders.

No. 1. Wt, 24.60

No. 2. Wt, 23.93

No. 2. Wt, 25.60

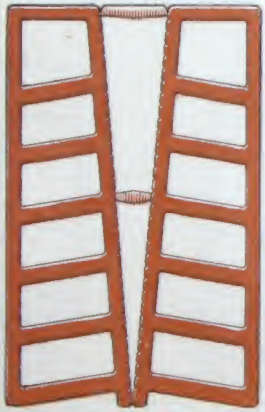
Wt, 17.68

S 15 x 3½ Wt, 18.70

h Single I-Beam Girders.

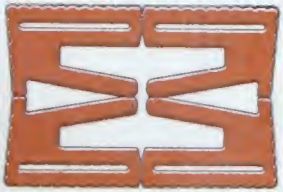
No. 1. Wt, 40.58

Blocks 1 and 2 Combined.



No. 2. Wt, 27.40

No. 2. Wt, 32.00



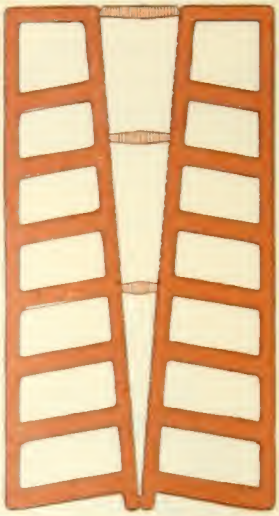
l, 23.05

S 20 x 3¼ Wt, 28.25

es; weights in pounds and for blocks 12 inches long.

SCALE: 1½ in. = 1 ft.

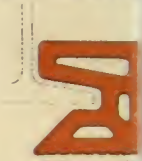
No. 1. Wt. 49.78



GIRDER COVERING CONS

For All Sys

Blocks 1 & 2 Combined.



F C 4½ x 4¼
Wt. 7.49
F P Wt, 6.24

No. 2. Wt. 38.28

F C 2¼ x 3¼
Wt, 3.32
F P Wt, 2.77

S 24 x 3¾ Wt (1 piece from No. 1 and No. 2), 34.47

24-inch Model-Arch Combination Skewback.

Covering for 24-inch Single I-Beam Girder.

S 11 x 3
Wt, 12.34

S 12 x 3
Wt, 13.20

S 13 x 3¼
Wt, 15.95

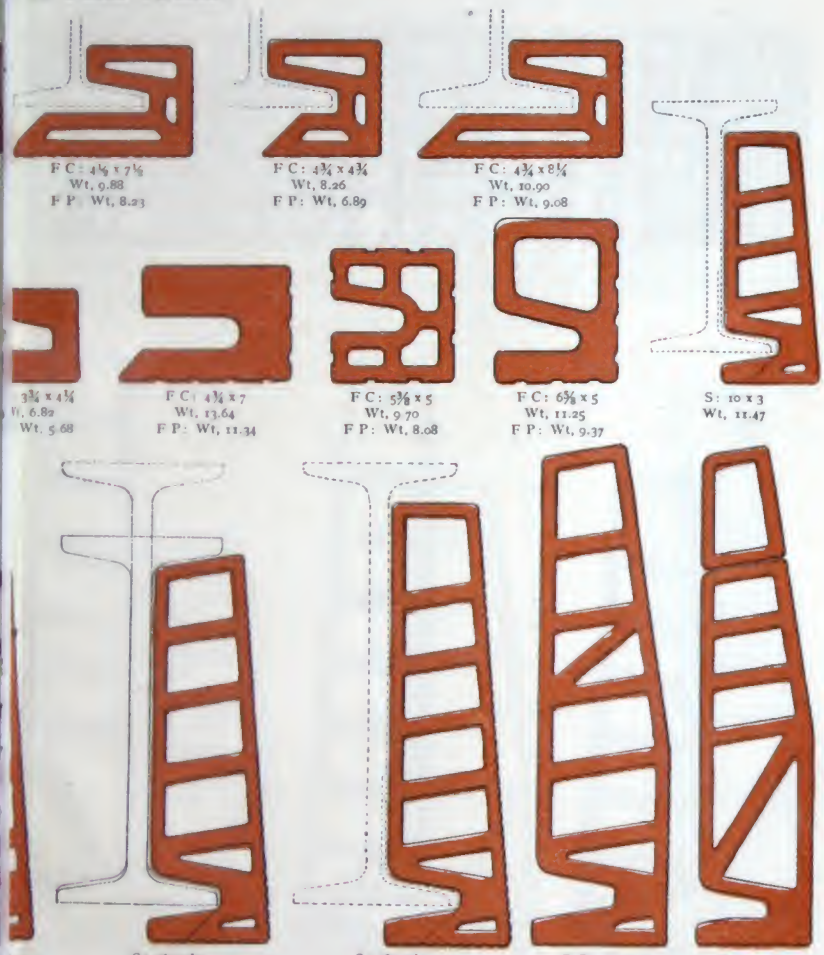
S 14 x 3½ (1
Wt, 17.6

The batter of the above skewbacks (Model-Arch skewback

S—Skewback; R S—Raised Skewback; F C—Flange Covering; F P—Full Po

JCTION: THE BLOCKS.—Continued.

s of Floor Arches.



F C: 4⅛ x 7½
Wt, 9.88
F P: Wt, 8.23

F C: 4¾ x 4¾
Wt, 8.26
F P: Wt, 6.89

F C: 4¾ x 8¼
Wt, 10.90
F P: Wt, 9.08

3¾ x 4¼
Wt, 6.82
Wt, 5.68

F C: 4¼ x 7
Wt, 13.64
F P: Wt, 11.34

F C: 5⅜ x 5
Wt, 9.70
F P: Wt, 8.08

F C: 6⅜ x 5
Wt, 11.25
F P: Wt, 9.37

S: 10 x 3
Wt, 11.47

S: 16 x 3⅛
Wt, 19.79

S: 18 x 3½
Wt, 23.05

R S: 20 x 3⅛
Wt, 29.92
Batter, 2 inches to 1 ft

R S: 20 x 3
Wt (2 pieces), 25.43
Batter, 2 inches to 1 ft

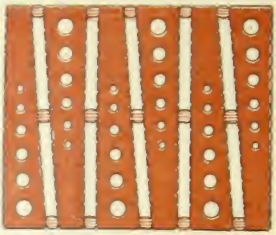
s, 10" to 18") is 1 inch to 1 foot of depth.

Dimensions in inches; weights in pounds, and for blocks 12 inches long. SCALE: 1½ in. = 1 ft.

GIRDER COVERING CONST

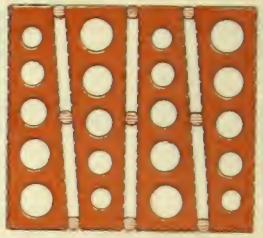
For All Syst

Batter: 1 in. to 1 ft.



No. 1. Wd: 9 x 10¾—Sb. Wt (including lugs), 41.38; F P, 34.49. One Piece: 9 x 1¾. Wt, 6.52; F P, 5.44.

Batter: 1 in. to 1 ft.

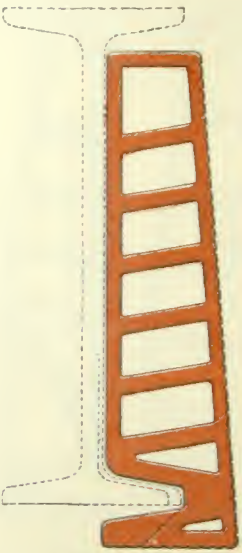


No. 2. Wd: 9 x 10—Sb. Wt (inc. lugs), 34.10; F P, 28.42. One Piece. 9 x 2½. Wt, 8.19; F P, 6.83.

Batter: 2 in. to 1 ft.

No. 3. Wd: 6 x 8⅛—Sb. Wt (inc. lugs), 31.25; F P, 26.04. One Piece: 9 x 2⅛. Wt, 7.79; F P, 6.24.

3 Skewbacks: Batter, 1 in. to 1 ft.



S: 20 x 3¾. Wt, 28.29

S: 24 x 3¾. Wt, 34.46

S: 16 x 4¼. Wt, 23.64. S: 20 x 3
S: 18 x 4. Wt, 27.19. S: 24 x 3

S = Skewback; R S = Raised Skewback; Wd = Wedge; Sb = Single Batter; Db = blocks 12 inches long. The second dimension is always the one

CTION: THE BLOCKS.—Continued.

of Floor Arches.

atter: 2 in. to 1 ft.

0. 4. Wd: 9 x 7—Sb. inc. lugs), 21.87; F P, One Piece: 9 x 4. 10.72; F P, 8.93.

Batters: 1 in. to 1 ft.

No. 10. Wd: 8 x 7 3/12—Db. Wt (inc. lugs), 24.84; F P, 20.70. One Piece: 8 x 2 1/12. Wt, 6.00; F P, 5.00.

Batters: 1½ in. to 1 ft.

No. 11. Wd: 8 x 7½—Db. Wt (inc. lugs), 24.67; F P, 20.56. One Piece: 8 x 2½. Wt, 5.46; F P, 4.96.

Batters: 2 in. to 1 ft.

No. 12. Wd: 8 x 7⅞—Db. Wt (inc. lugs), 25.85; F P, 21.54. One Piece: 8 x 2 1/12. Wt, 6.25; F P, 5.21.

3 Skewbacks: Batter, 2 in. to 1 ft.

29.49
33.16 R S: 18 x 4. Wt, 26.97

R S: 20 x 3½. Wt, 29.92

R S: 24 x 3. Wt, 33.97

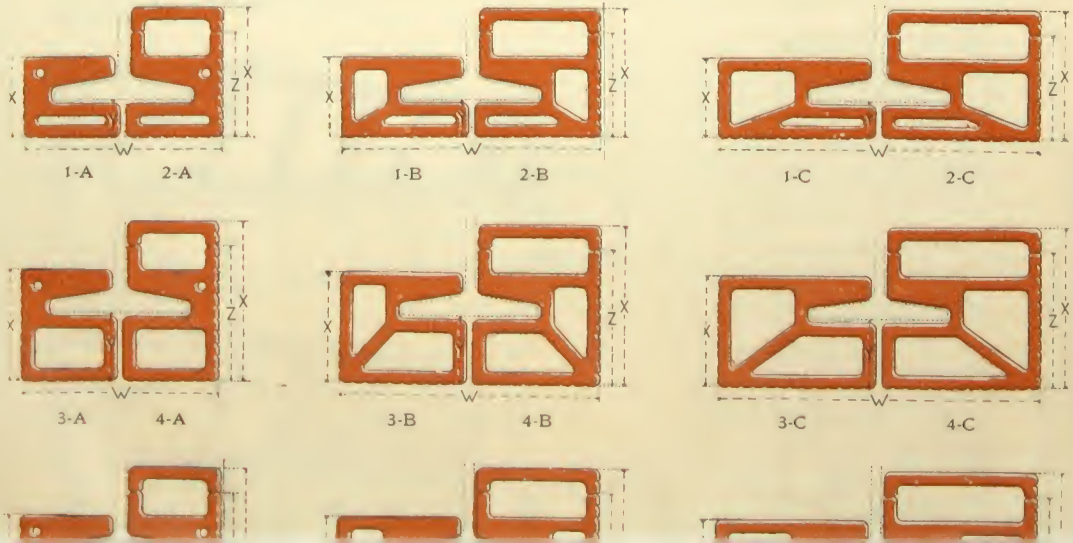
BLE BATTER; F P = FULL POROUS. Dimensions given in inches; weights in pounds, and for
ss the top of the block, or the double block, as set in the arch. SCALE: 1½ in. = 1 ft.

MODEL-ARCH GIRDER-COVERING SECTIONS.

SINGLE I-BEAM CONSTRUCTION.—Standard Sizes.

(Adaptable to All Kinds of Flat Arch Construction.)

Illustrated in the Sizes Made for 12-inch and 15-inch Standard Section I-Beams.



5-A 6-A

Patent applied for.

5-B 6-B

5-C 6-C

SCALE: 1½ in. = 1 ft.

PROPERTIES, SINGLE I-BEAM, MODEL-ARCH GIRDER-COVERING.

Blocks for 12″ and 15″ I-Beams.

As Illustrated Above.

Blocks	Dimensions in Inches W	X	Y	Z	Weight, per lineal ft. X Height; in lbs	Weight, per lineal ft. Z Height; in lbs
1-A	8	3¼	1½		5.25	
2-A	8	5¼	1½	4¼	7.24	5.85
3-A	8	4½	2¾		6.00	
4-A	8	6½	2¾	5½	7.99	6.60
5-A	8	5¾	4		6.75	
6-A	8	7¾	4	6¾	8.74	7.35
1-B	10½	3¼	1½		6.55	
2-B	10½	5¼	1½	4¼	8.91	7.15
3-B	10½	4½	2¾		7.48	
4-B	10½	6½	2¾	5½	9.84	8.08
5-B	10½	5¾	4		8.49	
6-B	10½	7¾	4	6¾	10.85	9.09
1-C	13	3¼	1½		7.28	
2-C	13	5¼	1½	4¼	9.64	7.88
3-C	13	4½	2¾		8.48	
4-C	13	6½	2¾	5½	10.62	9.08
5-C	13	5¾	4		9.54	
6-C	13	7¾	4	6¾	11.67	10.14

Blocks for 18″ and 20″ I-Beams.

Same Designs. (Not illustrated.)

Blocks	Dimensions in Inches W	X	Y	Z	Weight, per lineal ft. X Height; in lbs	Weight, per lineal ft. Z Height; in lbs
1-A, 2	9	3½	1½		6.16	
2-A, 2	9	5½	1½	4½	8.27	6.76
3-A, 2	9	4¾	2¾		6.91	
4-A, 2	9	6¾	2¾	5¾	9.02	7.51
5-A, 2	9	6	4		7.66	
6-A, 2	9	8	4	7	9.77	8.26
1-B, 2	11½	3½	1½		7.09	
2-B, 2	11½	5½	1½	4½	9.70	7.69
3-B, 2	11½	4¾	2¾		8.14	
4-B, 2	11½	6¾	2¾	5¾	10.76	8.74
5-B, 2	11½	6	4		9.19	
6-B, 2	11½	8	4	7	11.06	9.79
1-C, 2	14	3½	1½		8.06	
2-C, 2	14	5½	1½	4½	10.35	8.66
3-C, 2	14	4¾	2¾		9.11	
4-C, 2	14	6¾	2¾	5¾	11.40	9.71
5-C, 2	14	6	4		10.16	
6-C, 2	14	8	4	7	12.45	10.76

Blocks for 24″ I-Beam.

Same Designs. (Not illustrated.)

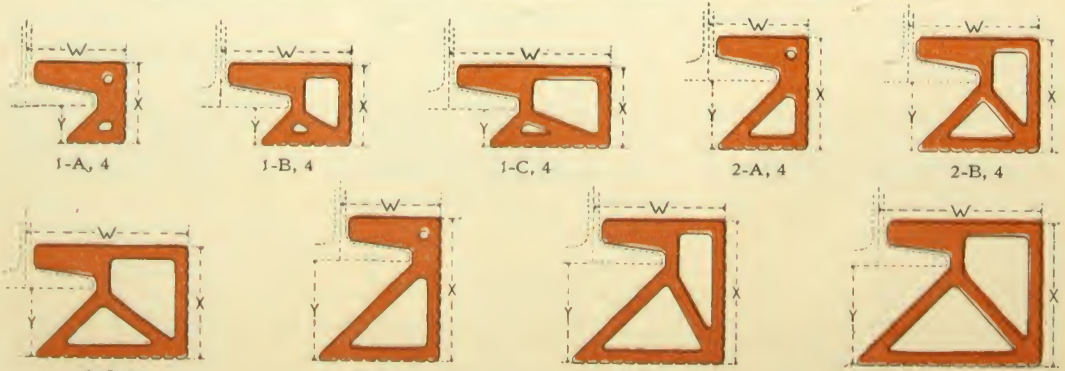
Blocks	Dimensions in Inches W	X	Y	Z	Weight, per lineal ft. X Height; in lbs	Weight, per lineal ft. Z Height; in lbs
1-A, 3	10	3½	1½		6.85	
2-A, 3	10	5½	1½	4½	9.14	7.45
3-A, 3	10	4¾	2¾		7.60	
4-A, 3	10	6¾	2¾	5¾	9.89	8.20
5-A, 3	10	6	4		8.35	
6-A, 3	10	8	4	7	10.64	8.95
1-B, 3	12½	3½	1½		7.54	
2-B, 3	12½	5½	1½	4½	10.20	8.14
3-B, 3	12½	4¾	2¾		8.59	
4-B, 3	12½	6¾	2¾	5¾	11.25	9.19
5-B, 3	12½	6	4		9.64	
6-B, 3	12½	8	4	7	12.30	10.24
1-C, 3	15	3½	1½		8.51	
2-C, 3	15	5½	1½	4½	10.94	9.11
3-C, 3	15	4¾	2¾		9.56	
4-C, 3	15	6¾	2¾	5¾	11.99	10.16
5-C, 3	15	6	4		10.61	
6-C, 3	15	8	4	7	13.04	11.21

MODEL-ARCH GIRDER-COVERING SECTIONS.—Continued.

DOUBLE I-BEAM CONSTRUCTION.—Standard Sizes.*

(Adaptable to All Kinds of Flat Arch Construction.)

Illustrated in the Sizes Made for 12-inch and 15-inch Standard Section I-Beams.



1-A, 4 | 1-B, 4 | 1-C, 4 | 2-A, 4 | 2-B, 4

2-C, 4 | 3-A, 4 | 3-B, 4 | 3-C, 4

Patent applied for.

PROPERTIES, DOUBLE I-BEAM, MODEL-ARCH GIRDER-COVERING.

Blocks for 12″ and 15″ I-Beams.
As Illustrated Above.

	Dimensions	per in lbs

Blocks for 18″ and 20″ I-Beams.
Same Designs. (Not Illustrated.)

	Dimensions	per in lbs

Blocks for 24″ I-Beam.
Same Designs. (Not illustrated; except 1-A, 6.)

	Dimensions	per in lbs

	W	X	Y	Weight
	in Inches			
1-A, 4	4	3¼	1½	4.11
2-A, 4	4	4½	2¾	5.34
3-A, 4	4	5¾	4	6.55
1-B, 4	5¼	3¼	1½	5.04
2-B, 4	5¼	4½	2¾	6.48
3-B, 4	5¼	5¾	4	8.22
1-C, 4	6½	3¼	1½	6.00
2-C, 4	6½	4½	2¾	7.71
3-C, 4	6½	5¾	4	9.24

	W	X	Y	Weight
	in Inches			
1-A, 5	4½	3½	1½	4.86
2-A, 5	4½	4¾	2¾	6.12
3-A, 5	4½	6	4	7.38
1-B, 5	5¾	3½	1½	5.81
2-B, 5	5¾	4¾	2¾	7.31
3-B, 5	5¾	6	4	8.90
1-C, 5	7	3½	1½	6.85
2-C, 5	7	4¾	2¾	8.29
3-C, 5	7	6	4	9.85

	W	X	Y	Weight
	in Inches			
1-A, 6	5	3½	1½	5.13
2-A, 6	5	4¾	2¾	6.51
3-A, 6	5	6	4	7.68
1-B, 6	6¼	3½	1½	5.95
2-B, 6	6¼	4¾	2¾	7.45
3-B, 6	6¼	6	4	9.04
1-C, 6	7½	3½	1½	7.05
2-C, 6	7½	4¾	2¾	8.50
3-C, 6	7½	6	4	10.04

Made and Shipped in Pairs: Blocks as Shown Below.


1-A, 4


1-B, 4


1-C, 4


2-A, 4


2-B, 4


2-C, 4


3-A, 4


3-B, 4


3-C, 4


1-A, 4 Beam Soffit, 1½" x 16" 1-A, 4

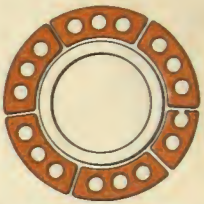
1-A, 6

SCALE: 1½ in. = 1 ft.

* Soffit blocks made specially. A girder composed of more than two beams simply requires a longer soffit block. (See cut in bottom line.)

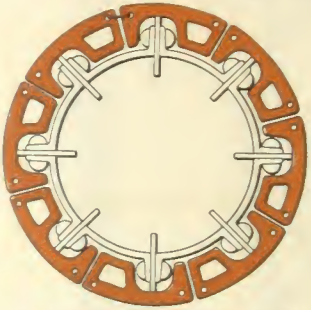
COLUMN-COVERING CONSTRUCT

1 ROUND. (Cast Iron.) Blocks solid, with end holes for clasps. Made 1, 1½, 2, 2½ and 3 inches thick, in porous and semi-porous material, and in shapes suitable for all size columns.

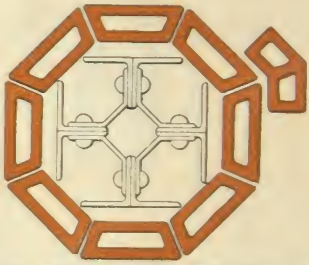


2 ROUND. (Cast Iron.) Blocks with voids, as shown. Made 2, 2½, 3, 3½ and 4 inches thick, in porous and semi-porous material, and in shapes suitable for all size columns.

3 LARIMER. (Steel.) Blocks with voids, as shown. Made 2 inches thick, in porous and semi-porous material, and in shapes suitable for all size columns.



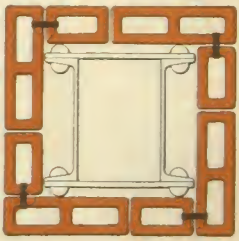
12 PHŒNIX. (Steel.) Blocks with void, and holes for clamps, as shown. Made 3 and 3½ inches thick (according to size of column), in porous and semi-porous material, in 3 sizes—adaptable to all size columns. Light sections made with a supporting lug, to be broken away when used. Each tier of blocks set reversed, to break joints.



51d. THE GRAY (Steel.) Built with 2, 3 and 4-inch Flat and Angle Partition Blocks—with ends bevelled suitable to the construction of columns of all diameters, and of octagon or other polygon shapes. (Bonding block, shown adjoining, also in column 9, made adaptable to all diameters.)

51c. STRUC Angle suitable of all di adjoini

50. CHANNEL AND ANGLE. (Steel.) SOLID CONSTRUCTION. Blocks: solid, with end holes for clasps. Made 1, 1½, 2, 2½ and 3 inches thick, in porous and semi-porous material. Standard partition sizes. Filling broken or defective terra cotta.



51. BOX COLUMN (Steel.) STANDARD PARTITION BLOCK CONSTRUCTION. Blocks, as shown, set in the vertical way—this method admitting of the ready use of clasps as well as the usual bonding together of the blocks.

51. BOX COLUM STRUCTION. Shown tition. Blocks sta (Partition blocks are m ordered, so that they horizontally as desired

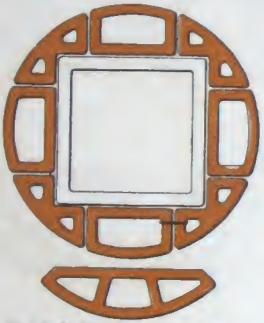
N.—Standard Methods. Sections as Numbered.

3. LARIMER. (Steel.) SOLID CONUCTION. Blocks: same as shown, ons 1 and 3. Filling: broken terra

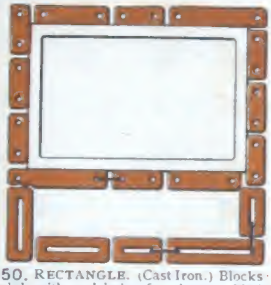
10. PHŒNIX. (Steel.) Blocks: with a void and holes for clamps. (Bonding block shown, section 11.) Made in porous and semi-porous material, in 3 sizes—adaptable to all size columns.

11. PHŒNIX. (Steel.) Blocks: with voids, as shown. (Bonding block shown, section 10.) Made in porous and semi-porous material, in 3 sizes—adaptable to all size columns. Light sections made with a supporting lug.

RAY. (Steel.) SOLID CONBuilt with 2, 3 and 4-inch Partition Blocks. Made construction of columns s. (Bonding block shown illing: broken terra cotta.

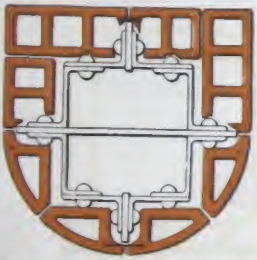


13, 14 & 15. SQUARE. (Cast Iron.) Blocks, with voids, as shown. Made in porous and semi-porous material, and in 3 sizes—suitable (with filler pieces) for all size columns.



50. RECTANGLE. (Cast Iron.) Blocks solid, with end holes for clasps. Made 1, 1½, 2, 2½ and 3 inches thick, in porous and semi-porous material, and in standard partition sizes. (Pipe chase, as shown, built of partition blocks, set vertically.)

el.) SOLID CONnected with a parpartition sections. are, when specially e set vertically or



16 & 51. Z-BAR. (Steel.) Built with standard partition blocks set vertically and with the use of a special block, of the design shown, made in 3 sizes—adaptable to all size columns. (Sections No. 13, 14 and 15 also applicable to the rounded part of this construction.)

51. Z-BAR. (Steel.) DOUBLE FIRE-PROOF CONSTRUCTION. Built of Standard Flat and Right-Angle Partition Blocks, set vertically.

SCALE: ¾ in. = 1 ft.

COLUMN-COVERING CONSTRUC

4. C C: 2 x 13
Wt, 10.82 F P: Wt, 9 02

4 a. C C 2 x 14½
Wt, 13.03 F P: Wt, 10.86

4
Wt, 14

11. C C: 2½ x 9
Wt, 7.97 F P: Wt, 6.64

12. C C: 3¼ x 9½
Wt, 9.33 F P: Wt, 7.78

10. C C: 2½ x 9¼
Wt, 5.80 F P: Wt, 4.84

16. C
Wt, 6.79

1. C C: (1 piece) 1 x 5½
Wt, 2.71 F P: Wt, 2 26

1 a. C C: (1 piece) 1 x 8
Wt, 4.12 F P: Wt, 3.44

1 b. C C: (1 piece) 1 x 8¼
Wt, 4.72 F P: Wt, 3.94

1 c. C C (1 pie
Wt, 5.96 F

2. C C: (1 piece) 2 x 7¼
Wt, 5.18 F P: Wt, 4.32

2 a. C C: (1 piece) 2 x 8½
Wt, 6.99 F P: Wt, 5.93

2 b. C C: (1 piece) 2 x 9½
Wt, 7 54 F P: Wt, 6.29

2 c. C C
Wt, 9.04

50 a. C C: (1 piece) 2 x 4 x 6
Wt, 9.31 F P: Wt, 7.75

50 b. C C: (1 piece) 2 x 4 x 8
Wt, 11.22 F P: Wt, 9.35

50. C C: (1 piece) 2 x 6
Wt, 6.94 F P: Wt, 5.78

51a. C C: 2 x 4 x 6
Wt, 7.84 F P: Wt, 6.54

51b. C C. 2 x 4 x 8
Wt, 9.58 F P. Wt, 7 98

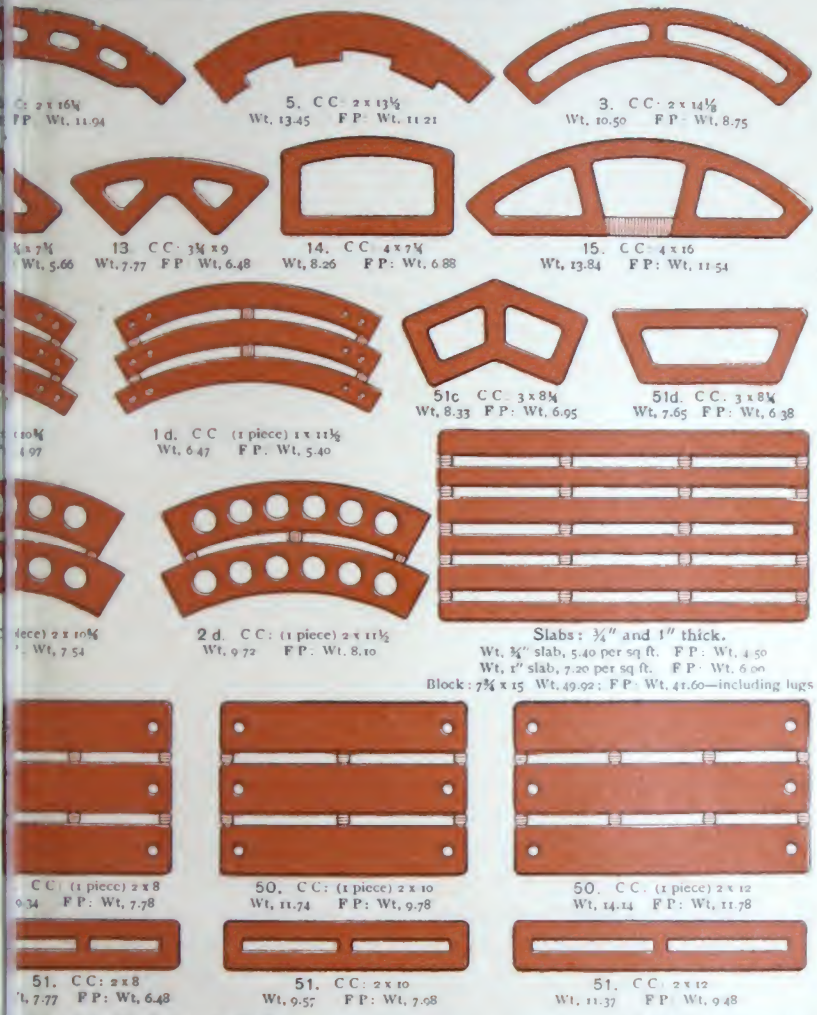
51. C C 2 x 4
Wt, 4.02 F P. Wt, 3 35

51 C C 2 x 6
Wt, 5.82 F P: Wt, 4.85

C C = Column Covering; F P = Full Porous. Dimensions given in inches; weights i

*See, Table of Properties, Column-covering Sections, for information concerning th

ON: THE BLOCKS. Standard Sections.*



2 x 16¼
FP Wt. 11.94

5. C C 2 x 13½
Wt. 13.45 F P Wt. 11 21

3. C C 2 x 14⅛
Wt. 10.50 F P Wt. 8.75

¼ x 7¼
Wt, 5.66

13. C C 3¼ x 9
Wt. 7.77 F P Wt. 6.48

14. C C 4 x 7¼
Wt, 8.26 F P: Wt, 6 88

15. C C 4 x 16
Wt, 13.84 F P: Wt, 11 54

10¾
4.97

1 d. C C (1 piece) 1 x 11½
Wt, 6 47 F P. Wt, 5.40

51c C C 3 x 8¼
Wt, 8.33 F P: Wt, 6.95

51d. C C. 3 x 8¼
Wt, 7.65 F P: Wt, 6 38

iece) 2 x 10¾
Wt, 7 54

2 d. C C: (1 piece) 2 x 11½
Wt, 9 72 F P. Wt. 8.10

Slabs: ¾" and 1" thick.
Wt, ¾" slab, 5.40 per sq ft. F P: Wt, 4 50
Wt, 1" slab, 7.20 per sq ft. F P: Wt, 6 00
Block: 7¾ x 15 Wt, 49.92; F P: Wt, 41.60—including lugs

C C (1 piece) 2 x 8
9.34 F P: Wt, 7.78

50. C C: (1 piece) 2 x 10
Wt, 11.74 F P: Wt, 9.78

50. C C. (1 piece) 2 x 12
Wt, 14.14 F P: Wt, 11 78

51. C C: 2 x 8
Wt, 7.77 F P: Wt, 6.48

51. C C: 2 x 10
Wt, 9.57 F P: Wt, 7.98

51. C C 2 x 12
Wt, 11.37 F P Wt, 9 48

nds, and for blocks 12 inches long.

SCALE: 1½ in. = 1 ft.

ctions in sizes not illustrated. Light and easily broken blocks made with supporting lugs.